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THE SURGICAL TREATMENT OF PENDULOUS ABDOMEN

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FROM earliest times, surgeons have given much study to the repair of hernial defects of the abdominal wall, but have devoted little attention to that defect resulting from a general stretching of its musculo-aponeurotic structures. Webster's operation (performed November, 1898, at the Royal Victoria Hospital, Montreal), was the first recorded effort to cure this condition by surgical means.

A glance at the normal anatomy of the abdominal wall will aid us in more readily understanding the morbid changes which occur in the structures concerned. In the adult, the linea alba varies in width from one eighth of an inch at its lower end to three quarters of an inch at its upper end. Its fibres are so intricately interwoven that it cannot in any direction be split. At the junction of its lower two-fifths with its upper three-fifths is situated the umbilicus. External to each rectus is the linea semilunaris, an aponeurotic area of variable width, but wider in its lower than in its upper half. Three tendinous intersections divide each rectus muscle into segments. Although these intersections do not usually penetrate through the whole thickness of the muscle, each segment is capable of independent contraction. The most marked of these intersections is the one opposite the umbilicus. The anterior layer of the muscle sheath is intimately attached to them.

Cases of relaxed abdominal wall or pendulous abdomen may be divided into two classes, those in which separation of the rectus muscles is present, and those in which there is no separation. In cases with separation, the linea alba becomes thinned and stretched.

This stretching occurs in all directions. It begins in the region of the umbilicus, but reaches its maximum below this point. In advanced cases, the widest separation is found at the level of the fold of Douglas. In the longitudinal direction, the extent of stretching is indicated by the increase in the distance between navel and pubes. Instead of two-fifths, it may be increased to three-fifths of the whole length of the linea alba. This apparent upward displacement of the umbilicus also shows that the longitudinal stretching takes place chiefly below this point. The rectus muscles themselves become stretched and much attenuated. This also is most marked in the lower half of the muscle. In the second class, in which there is no separation of the recti, the stretching and relaxation is most marked in the aponeurotic area of the lower abdomen external to these muscles. Dr. Coffey has published a description of this type of pendulous abdomen and has also devised an operation for its relief.

Many different methods have been practised by surgeons in the operative treatment of this condition. From this it may be inferred that one method is not suitable for every case, or, what is probably nearer the truth, that the best method has not yet been agreed upon. So far as the musculo-aponeurotic wall itself is concerned the various methods may be grouped as follows:

1. After exposing the aponeurosis by a long median incision, the fat and skin are dissected laterally as far as the margin of each rectus. The anterior sheath of each rectus is opened along the inner border of the muscle for a distance corresponding to the extent of the diastasis. Without opening the abdominal cavity, the stretched linea alba is folded inwards and the rectus muscles brought together by interrupted sutures. The anterior sheath of one side is then sutured to its fellow of the opposite side over the muscles. This is the operation devised by Webster. It has been adopted, with some unimportant changes, by several German surgeons, notably, Weinhold, Gersuny, Amann, Oehlecker.

2. After opening the abdomen, the linea alba is excised and both the anterior and posterior sheaths of each rectus are opened along the inner border of the muscle. The abdomen then is closed by three layers of interrupted sutures. One layer of sutures brings the posterior sheaths together, a second unites the inner borders of the rectus muscles, and a third brings the anterior sheaths together over the muscles. This method is practised by Jonesco, Gallet, Rouppert, and other French surgeons.

3. The double-breasted coat operation. This technique effects

a duplication of all the layers of the abdominal wall excepting the skin and subcutaneous fat. It consists in exposing the aponeurosis by a median incision extending from the pubes to a point well above the umbilicus. The umbilicus is excised and the skin and subcutaneous fat are reflected outward on each side as far as the semilunar line. The abdomen is opened by a median incision through the linea alba, corresponding in length to the extent of the diastasis. Two aponeurotic flaps are thus formed. These flaps are then over-



FIG. 1.—Case 1, Mrs. A., Before Operation.

lapped in a manner similar to that which would transform a single-breasted into a double-breasted coat. This is effected by placing a series of mattress sutures along the margin of the right flap and passing their free ends from within outward, by means of a pedicle needle, through the left semilunar line. The margin of the left flap is then sutured to the outer surface of the right semilunar line. Superfluous skin and fat is excised and the wound closed.

This is the operation most in favour among English and American surgeons who have written upon the subject. Carless states that he has performed it for the relief of pendulous abdomen

"a good many times, with very satisfactory results." In Germany, Piccoli adopted this technique in dealing with a very large umbilical hernia; and Heidenhain, in two cases, after removing a large ovarian cyst, adopted this means of reducing the capacity of the abdomen. The extensive overlapping makes union more secure and more effectively strengthens the middle line of the abdomen than does any other method. By this technique the rectus muscles can be brought together or overlapped, if that is deemed advisable. It does not, however, correct the stretching in the longitudinal direction. As has been pointed out, this stretching occurs chiefly below the umbilicus and involves both the aponeurosis and rectus muscles. These muscles may be attenuated to the bulk of the sartorius, as was the case in one of my patients. In order to relieve these overstretched muscles of strain and allow them to regain their tone, it is necessary to reduce the distance between pubes and ensiform cartilage. This can be effected by a transverse incision across each end of the median incision, and overlapping from above downwards; or, perhaps better, by a single transverse incision at the level of the fold of Douglas, the upper flap being placed internal (or posterior) to the lower, to accord with the normal arrangement at this point. W. Kausch, a German surgeon, reported a persistence of pendulous abdomen after performing a double-breasted coat operation. He attributed this failure to the sagittal elongation of the aponeurosis, and purposed overlapping in the vertical direction in his next case.

The following two cases exemplify the pathology of the extreme type of pendulous abdomen.

CASE 1. Mrs. A. (Figs. 1 and 2), admitted to St. Boniface Hospital, January, 1911, aged fifty-one, weight two hundred and forty pounds, height five feet ten inches. Has had thirteen children. Five years previously she weighed three hundred pounds. The abdomen hung down over the pubes completely hiding the external genitals. A small hernia protruded at the umbilicus. The distance from navel to pubes was considerably greater than from navel to ensiform cartilage. The recti were widely separated and the linea alba very thin, permitting the viscera to be readily palpated. In the erect position marked ptosis of the right kidney, liver, stomach and the transverse colon, could be easily determined. Between the recti, the subcutaneous fat was scanty. This woman complained of symptoms of indigestion, dragging pains in back and abdomen, and attacks resembling renal colic. These symptoms were of several years standing, and had gradually increased in

severity. She had not been able to attend to her house work for several months prior to entering the hospital.

On January 9th, 1911, operation was performed as follows: A median incision, extending from the pubes to a point midway between the navel and ensiform cartilage, was made through skin and fat down to the aponeurosis. The skin and subcutaneous fat were then reflected on each side out as far as the *linæ semilunares*, exposing the aponeurosis over a large oval-shaped area. The abdomen was opened through a median incision, and after dealing



FIG. 2.—Case 1, After Operation.

with the hernial contents, excising the sac and umbilicus, a diseased appendix was removed. The other abdominal and pelvic organs were found normal. The median incision through the aponeurosis was then extended the full length of the skin incision, thus forming two aponeurotic flaps. These flaps were overlapped from side to side after the manner of the double-breasted coat. For this purpose chromic gut mattress sutures were used. For additional security a longitudinal suture of stout bronze-aluminum wire was passed in and out through the aponeurotic flaps from one end of the wound to the other, each end being tied over gauze pads on the

skin surface. Before tightening the various sutures, it was found necessary, in order to prevent puckering, to make a transverse incision about four inches long across each end of the median incision. These transverse incisions were closed by overlapping from above downwards; thus shortening the elongated linea alba about four inches, as well as preventing puckering. In this case the overlapping from side to side amounted to about eight inches. Superfluous skin and fat was then excised, and the wound closed with a rubber drain at each end. Suppuration occurred in the upper



FIG. 3.—Case 2, Before Operation.

third of the wound superficial to the aponeurosis. She left the hospital six weeks later with wound healed. The photograph (Fig. 2) was taken in August, 1911, seven months after operation. At that time she said she had been completely relieved of her symptoms and felt in perfect health.

CASE 2. Mrs. S. (Figs. 3 and 4), aged forty-eight years, weight two hundred and seventy pounds, entered St. Boniface Hospital in June, 1911. She is the mother of twelve children.

Her complaints were similar to those of Case 1. Her symptoms began about eight years previously and had gradually increased in severity. For a year prior to operation she was unable to go about the house without the aid of an abdominal supporter. In 1908 gall stones were removed, with only temporary relief. On examination the rectus muscles were found separated the distance of ten inches at the level of the fold of Douglas. This was the point of widest separation. The umbilicus was found situated



FIG. 4.—Case 2, After Operation.

at the junction of the lower three-fifths with the upper two-fifths of a line drawn between the pubes and ensiform cartilage. The large amount of subcutaneous fat made it impossible to feel the kidneys, but the lower margin of the liver could be distinctly felt on a level with the navel.

Operation was performed as follows: A transverse incision

nineteen inches long was made across the dome of the belly through the skin and fat down to the aponeurosis. The skin and fat were reflected in the form of an upper and a lower flap, thus exposing the aponeurosis from the pubes to a point well above the umbilicus and laterally from one semilunar line to the other. The abdomen was then opened by a transverse incision carried across the middle of the exposed area from the inner border of one rectus to the inner border of the other, thus forming an upper and a lower aponeurotic flap. A number of bronze-aluminum wire mattress sutures were placed along the lower margin of the upper flap and the free ends passed from within outward through the aponeurosis at the lower border of the denuded area and tied upon the surface of the aponeurosis. This had the effect of drawing the upper flap down behind or internal to the lower. The upper margin of the lower flap was attached by means of chromic gut sutures to the outer surface of the upper flap. Overlapping to the extent of eight inches was thereby effected. A mass of superfluous skin and fat, weighing five pounds, was then excised and the wound closed. Convalescence was delayed by an attack of bronchitis. The photograph (Fig. 4) taken on the day she left the hospital one month after operation shows the effect on her figure. This woman has also been completely relieved of her symptoms.

In the second case, in which overlapping in one direction only (i.e. above downwards) was done, the improvement in figure is not so marked as in the first case, in which overlapping was done in both directions.

This study of the subject brings us to the following conclusions:

1. That there are two main indications, first to bring the rectus muscles together and, secondly, to correct the vertical elongation of the aponeurosis.

2. That the double-breasted coat operation, supplemented by a transverse incision with overlapping in the vertical direction, effectively meets these indications.

3. That the Webster operation is suitable for mild degrees of relaxation only. Even in these, the other method is preferable. It has the doubtful advantage of avoiding the opening of the peritoneal cavity. Such opening, however, is distinctly indicated for exploratory purposes in the great majority of cases.

4. That the practice of some surgeons of mobilizing the rectus muscles, drawing them out of their sheaths, and suturing them together in the median line, does not seem well considered. Such disturbance must effect injuriously their nerve and vascular supply.

Bésides, they are usually too much wasted to add much to the strength of the wall. A much stronger wall is formed by duplication of the aponeurosis.

5. That in cases associated with much subcutaneous fat, the transverse skin incision, as used in Case 2, is preferable to the median incision, in as much as it permits of free excision of the fat in the flanks, where it is most abundant.

6. That the good results of operation in pendulous abdomen strongly support the view that a normal intra-abdominal pressure is the most important factor in maintaining the viscera in position.

7. That this condition has not received the attention it deserves at the hands of the profession. In its milder degrees, relaxation of the abdominal wall is common; although extreme cases, such as I have here reported, are rare.

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At a meeting of the St. Catharines public school board, on Thursday, March 13th, a resolution from the City Teachers Association was read, asking that consideration be given to the necessity for the medical inspection of the children in the public schools. The matter was referred to the committee on school management.

SALVARSAN IN THE TREATMENT OF SYPHILITIC DISEASES OF THE CENTRAL NERVOUS SYSTEM

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MY purpose in writing this paper is to call attention to the hope that may be placed in the thorough treatment of diseases of the nervous system due to syphilis, and to present a simple and fairly exact way of establishing the diagnosis and prognosis, and of following the effect of treatment by laboratory methods, in addition to purely clinical examination. The material on which this work has been done was seen in Dr. Joseph Collins' service in the Neurological Institute of New York, in the years 1911 and 1912, some of the cases also having started treatment in the last few months of 1910. I wish to extend my thanks to Dr. Collins for his kind permission to me to publish these facts gathered from his material, and also, incidentally, for a very extensive and valuable experience gathered under him.

I should like, first, to attempt a rough classification of the field to be covered, but would say that it is not meant to be a complete list of diseases of the nervous system caused by syphilis, being merely a list of diseases of which a sufficient number of cases have been treated to give fairly reliable statistics. Those diseases of the brain and meninges studied are general paresis; cerebral syphilis or other psychoses apparently of specific origin; gummata of the brain; syphilitic meningitis, acute and chronic; epilepsy of specific origin; and diseases of the cerebral blood vessels, chiefly manifested by hemiplegia.

In general paresis the Wassermann reaction has been found to be positive in the blood of 100 per cent. of cases, and in the cerebrospinal fluid, using the larger quantities, say 1 cc., it has been found to be positive in 92 per cent. of cases. The globulin content in the cerebrospinal fluid has been found to be enormously in excess in 86 per cent., and the cells in excess in 71 per cent. With regard

*Read before the Academy of Medicine, Pathological Section, Toronto, February 25th, 1913.

to the number of cells found, different workers seem to have had different experiences. In the majority of our cases they numbered less than twenty to the cubic millimeter. In only a few cases did they rise above one hundred, as constantly reported by some observers.*

As regards the treatment of these cases, it is difficult to speak with certainty. The condition has been uniformly regarded as incurable and our experience cannot be said to belie this opinion. We have been hampered, however, by our inability to retain many of these cases under our care, due to the lack of accommodation for mental cases. Nevertheless, the results of treatment in a few cases can give us very valuable information. One, a man of forty-eight, showed a positive Wassermann reaction in the blood, negative in the cerebrospinal fluid, an excess of globulin, and eight cells per cubic millimeter in the latter. He was given 0.6 grms. of salvarsan intravenously, and a month later showed no change in the laboratory findings, the number of cells even remaining exactly the same. He was given a second dose intravenously, but died some months later having shown no improvement. A second case, male, aged forty-two, first gave a positive Wassermann reaction in the blood and cerebrospinal fluid, an excess of globulin, and eleven cells per cubic millimeter in the latter. Within five months he was given six doses of salvarsan (0.6 grms.), and three examinations made showed no change in the laboratory findings except a reduction in the number of cells from eleven to eight, quite probably a mere accident. In the last examination the Wassermann reactions were negative, the globulin somewhat reduced in amount, and the cells eight. Shortly after, he had a series of convulsions and a hemiplegia, and died within twenty-four hours. A third, and for my purpose, the most important, was a male, thirty-two years of age, with Wassermann reaction in the blood and cerebrospinal fluid positive, globulin in excess, and cells thirty to the cubic millimeter in the latter. In the first three months of treatment he had the equivalent of thirteen full doses once or twice a week or farther apart, sometimes given in half doses more frequently. At the end of this time treatment was suspended, owing to the appearance of an intense general dermatitis. This we took as an indication of the limit of his tolerance for arsenic, and it was rather interesting to notice that after this the administration of very small doses was sufficient to bring about a return of the rash.

*These figures have been previously published by Dr. Collins and myself in the *Journal of the American Medical Association*, June 22nd, 1912.

During this treatment the only change in the laboratory findings was a reduction in the number of cells from thirty to twelve per cubic millimeter. Six weeks later he was so well mentally and physically that plans were made to put him back to work as a stenographer, and indeed he was doing some such work for us. But for a week he complained of headache, and one night he became irritable, his speech was almost unintelligible, and after a slight convulsion he became comatose and remained so for thirty-six hours. During this, and for a few days after, he was almost unable to swallow and could hardly speak. For two weeks following this his mental condition was worse than it had ever been; but without treatment he returned to his former improved condition. Treatment was again resumed and he has now had the equivalent of twenty full doses. The laboratory findings have now become entirely negative. I say that for my purpose he gives the most valuable information. We had hitherto stated that in general paresis the laboratory findings could not be appreciably altered, and certainly could not be rendered negative, in which case we were bound to admit the disease was incurable. But here is a ray of hope, and perhaps, if treatment is pushed even more vigorously, we may yet conquer the disease. At all events the futility of a few doses has been demonstrated.

By cerebral syphilis I mean those psychoses of syphilitic origin not showing the symptomatology of general paresis. I am aware that it is a loose term, but it is meant to be. Many cases of insanity occur with a definite history of syphilis, which may perhaps have merely precipitated a latent psychosis due to other causes. In these the laboratory findings frequently include positive Wassermann reaction in both blood and cerebrospinal fluid, with an excess of globulin and cells in the latter. The results of salvarsan therapy in these cases have been almost on a par with those in paresis, though the laboratory evidences of active syphilis have been more readily abolished, and some cases have made marked improvement, though others have later developed typical paresis.

Gummata of the brain are almost always of meningeal origin, and so may be classed with syphilis of the meninges. But I give them a separate paragraph in order to consider the grave consequences that large ones may cause. Such consequences are: optic neuritis, giving way to atrophy if not quickly relieved, an extension of the permanent damage caused to the brain substance by pressure as well as by the actual inflammatory condition, and so on. I shall refer to the influence of salvarsan on the optic nerve later, but would

say here that if treatment by salvarsan is once begun, it should be vigorously pushed. In all cases, of course, if there is evidence of much or increasing pressure, decompression may have to be performed in addition to the salvarsan treatment, as well as in the older form of medication.

Cases of meningitis due to syphilis may be chronic or acute, and may involve all the coverings to a marked extent, or one more than another. The chronic cases present, perhaps, only the solitary symptom of headache for a number of years, and may give little or no evidence of active syphilis, as far as laboratory findings are concerned. In these cases, if one has reason to suspect that they are due to syphilis, salvarsan can do no harm, though it may not give much relief. In the acute cases, however, we find a positive Wassermann reaction in the blood, varying in the cerebrospinal fluid, and usually an excess of globulin, and from one to several hundred cells per cubic millimeter in the latter. They have been most satisfactory cases to treat, as may be seen from the following case: Male, aged twenty-five. Six weeks headache, general lassitude and increasing somnolence. Admitted in a semicomatose condition; knee and ankle jerks increased; Babinski reflex present in both feet; complete paralysis of external rectus muscle of left eye, almost complete of right; discs pinkish, margins indistinct; pupils large, but react; Wassermann reaction in blood and cerebrospinal fluid positive; globulin in excess and cells one hundred and thirty-four per cubic millimeter in the latter. He was given 0.6 grms. salvarsan intravenously, and five days later had no headache, and could read the newspaper easily, the paresis of the left external rectus muscle being comparatively slight, and that of the right eye not appreciable. He was given a second full dose a week later, and five weeks from his admission to the hospital he returned to work. Since then he has not missed a day's work from sickness, and has gained over forty-five pounds in weight. Here two doses were sufficient to render the laboratory findings in the cerebrospinal fluid negative, but a third dose was given later on account of the persistence of the positive Wassermann reaction. Now, more than a year later, there is nothing revealed by his feelings, laboratory investigation, nor physical examination, to show that he has ever been sick, except the persistence of the Babinski sign.

Epilepsy in adults is frequently caused by syphilis, and in many of our cases where other causes, such as renal disturbances, could not be discovered, they were treated as such. In as many as fifty per cent. of these cases no sign of active syphilis could be

obtained, though in some a history of infection was given. In none of them were any pathological changes found in the cerebrospinal fluid, and a positive Wassermann reaction in the blood of only a few. Yet in many of these in whom the laboratory findings were negative, a marked reduction in the frequency of the convulsions occurred after the administration of one or two doses of salvarsan, and in some they ceased altogether. Where the history of convulsions extended back over five or six years, the results were not so good.

Syphilitic changes in the cerebral vessels, as evidenced by headache, vertigo, paræsthesias, hemiplegia, etc., caused, as might be expected, unless the vessels were of meningeal origin, little change in the cerebrospinal fluid. The Wassermann reaction was frequently negative, the globulin very little in excess, if at all, and the cells below twenty per cubic millimeter. The Wassermann reaction in the blood was usually positive. If these cases were not of more than three to six months standing, they were usually quickly and markedly improved by salvarsan, and the laboratory findings were soon rendered negative. Those of longer standing could only expect that the further extension of the disease might be checked.

Coming to the spinal cord, we shall consider tabes, degenerative and exudative; myelitis; gummata of the cord and of the roots; meningitis, chronic and acute; and those cases simulating tumours of the cord, and certain conditions resembling diseases of other ætiology, viz., progressive muscular atrophy and paramyoclonus multiplex.

Without entering into the controversy of what is the exact process leading up to the development of tabes, we have taken as a working hypothesis the idea that the degenerative change may be due to an existing or a previous inflammatory condition of the meninges. The presence of an excess of globulin and cells in the cerebrospinal fluid has been regarded as an indication of this inflammation, and where these pathological elements are present we designate the case as one of exudative tabes. Where they are absent, we regard the inflammation as having subsided, leaving permanent degenerative change in the roots, posterior columns, etc., and call this type of case degenerative tabes. Statistics vary somewhat widely in regard to the laboratory findings in tabes, on account, no doubt, of the comparative ease with which they can be altered by treatment in addition to the differences in severity of the different cases. Our cases gave a positive Wassermann

reaction in the blood in 66 per cent., but in the cerebrospinal fluid in only 41 per cent., globulin was in excess in the cerebrospinal fluid in 33 per cent. and cells in 60 per cent. The number of cells ranged from one to two or three hundred, between fifty and one hundred being a fair average.

The salvarsan treatment of tabes has been most satisfactory. At the beginning little was expected from salvarsan for the degenerative cases, and little was accomplished beyond the tonic effects of the arsenic. Reliance had to be placed on other forms of treatment. However, in the exudative cases the pathological conditions of the blood and cerebrospinal fluid were found to be under excellent control. The globulin usually diminished or disappeared first, the cells came down rapidly in number, and the Wassermann reaction in the blood and cerebrospinal fluid in all cases disappeared after varying amounts of treatment. But here a note of warning is necessary. Even the complete disappearance of all signs of active syphilis is no guarantee that the disease has been entirely eradicated. Both fluids must be examined from time to time, at first frequently, perhaps a month apart, later at longer intervals, so that we may immediately renew treatment on the earliest reappearance of the condition, at which time it is most easily controlled, and before any further degree of permanent damage may have resulted. Nor is it time to rest on our oars when the syphilis has been checked. That is not the whole treatment of tabes. The patient has probably heard or has been told that the disease is incurable, and perhaps that he will never walk again. I believe the disease to be essentially curable. I do not mean that we can replace wholly degenerated nerve tissue, but why should we say his symptoms are due to completely degenerated fibres and tracts? If we relieve the inflammation, who can say how much exudate and oedema will disappear? This encouragement has to be given. The patients *morale* has to be improved. He must be reeducated, and taught to help himself. Only where we can get his coöperation, and are prepared to personally supervise his efforts, can we expect to get the best results.

Myelitis, as encephalitis, is usually an extension from the meninges into the nervous tissue. Under it I would include cases of spastic paraplegia, gummata in the cord, obliterative changes in the blood vessels, and the cases mentioned above as simulating diseases of other aetiology. As far as any of these cases are concerned, the laboratory findings must depend on the amount of meningeal involvement. This may be very slight, but the inflammatory

condition, having extended into the substance of the cord, has produced grave symptoms without very striking changes in the cerebrospinal fluid. The Wassermann reaction in the blood is usually positive. In the cerebrospinal fluid it is variable. Globulin is usually in excess, except in those cases due to blood vessel change, where it is often not in excess, and the cells number perhaps from fifty to one hundred or higher. The syphilitic process in these is usually easily checked, as evidenced by the reduced or negative laboratory findings, but permanent damage is more likely to have resulted in these cases than in ones of pure meningeal involvement.

Cases such as these, resembling progressive muscular atrophy, are probably more frequent than has hitherto been imagined, and yet those of our cases which were examined from this standpoint, and found to be due to syphilis, showed marked improvement rapidly following treatment by salvarsan.

I have seen only one case resembling paramyoclonus multiplex. He had a positive Wassermann reaction in the blood and cerebrospinal fluid, an excess of globulin, and ninety cells per cubic millimeter in the latter. Within two weeks of starting treatment the pathological movement in the muscles had ceased, and the condition of the blood and cerebrospinal fluid had improved, but he is too recent a case to give any conclusions yet.

Of all conditions requiring thorough investigation, that so often carelessly called neurasthenia, requires most. Frequently, in seeking for a cause for the symptoms bringing a so-called neurasthenic to us, evidences of syphilis have been found, perhaps a direct history of infection, or a history of the husband having died of tabes, etc. These cases would give a positive Wassermann reaction in the blood, but usually no changes in the cerebrospinal fluid. Systematic treatment with salvarsan was found to be of the greatest assistance in the relief of these patients.

One point about which there has been a great deal of misunderstanding and unnecessary fear is the danger to the special senses, especially sight, in salvarsan therapy. So far, in many hundred cases treated, we have seen no injurious action to the special senses. It is now understood that one dose may be sufficient to bring about an exacerbation of symptoms in cases of syphilis. This can be readily seen in the pains of a tabetic, which almost invariably become worse after the administration of salvarsan. It has also been recognized in treatment by mercury and iodides. If, then, we stop at this point in the case where a patient's optic nerves are affected, it is obvious that the increased inflammatory

reaction, lasting perhaps only a few hours, may just be sufficient to cause permanent impairment of vision. Rather than proceed cautiously, we must, having once started, push on rapidly until we have conquered the process. If asked do I fear impairment of the function of the special senses from the use of salvarsan, I would reply, no, I have never seen it, and am not afraid of it, I must be permitted, however, to push the treatment vigorously, and I must be sure of my technique, so that no adventitious influences may complicate my results.

Two cases may illustrate results. One, a man in the early stage of general paresis, had been for two weeks getting progressively deafer. When first seen he could hear a low whisper at only four feet. In a month's time, after one dose of salvarsan he could hear a low whisper at twenty-three feet. This improvement was maintained, and during the next few months he received many more doses. At a later stage in our experience we should have pushed the treatment much harder. The other case was that of a man whose vision was so poor that he could not see a chair in his path as he walked across the floor. The discs were very white with only a faint pinkish tinge. The Wassermann reaction in the blood and cerebrospinal fluid was positive. Globulin was in excess in the latter, and fifty cells to the cubic millimeter. He was given four full doses of neosalvarsan on alternate days, and three months later could read newspaper type readily. At this time the treatment was repeated on account of the Wassermann reaction in the blood still being positive, though the cerebrospinal fluid showed no abnormalities. These cases quoted above were for almost two years treated by salvarsan alone, and in this way much information as to its effect was obtained. Nevertheless, it has been found advisable to put many patients on heavy mercurial treatment in addition. In many cases alone it might have had almost no appreciable effect, yet when combined with salvarsan it was most helpful in finally conquering obstinate cases.

We have had our failures as well as successes in the use of salvarsan. General paresis must even yet be classed among the failures. Yet even here I believe there is a ray of hope. Some cases of pachymeningitis, both cerebral and spinal, have relapsed or even not responded at all. But there can be no reasonable doubt that in salvarsan at the present time we have the most valuable weapon known to fight syphilis of the nervous system, that cases can be cured, or at least put back in the ranks of wage earners, and that salvarsan is not to be feared as some would have us do.

If used at all it must be used freely, until all laboratory indication of active syphilis has disappeared. Above all, we cannot expect miracles from it, and its use must frequently be supplemented by other forms of treatment, whether medical, surgical, or other.

In speaking of the cells which are found in excess in the cerebrospinal fluid of these cases, lymphocytes are meant in the majority of instances, they being those most commonly found in excess in chronic diseases. We have been in the habit of demonstrating them by the Fuchs-Rosenthal method. A stain of the following composition is drawn up to the "1" mark of a white blood cell pipette: methyl violet 0.1, acetic acid 2, distilled water 50. The cerebrospinal fluid, freshly obtained and well shaken to ensure an even distribution of the cells, is then drawn up to the "11" mark. After a couple of minutes the cells will be found well enough stained to be counted in an ordinary blood counting chamber, preferably of a Zappert or Türk ruling. The excess of globulin is detected by the Kaplan method. Half a cubic centimeter of the fluid is brought to the boiling point, avoiding bubbling, in a test tube one centimeter in its interior diameter. Two drops of a 5 per cent. solution of butyric acid are added, and the mixture again brought gently to the boiling point. Half a cubic centimeter of supersaturated solution of ammonium sulphate is then run in under the mixture. If a flocculent precipitate appears within twenty minutes, globulin is considered to be present in excess. These two methods in themselves give a very fair index as to the patient's condition, when it is found difficult or impossible to have Wassermann reactions performed. That is, provided they are at all in excess. Their absence cannot be taken to imply that there is no active syphilitic process at work.

THE Perley Memorial Hospital for Consumptives was formally opened by H.R.H. the Duke of Connaught, March 12th. The group of buildings, including the one just opened and the Lady Grey Hospital, in future will be known as the "Royal Ottawa Sanatorium." This name has been given with the consent of His Majesty the King, who thus expresses the keen interest taken by him in the prevention of tuberculosis.

MILK AND MEAT INSPECTION

BY C. E. EDGETT, V.S.

Dominion Government Meat Inspector, Montreal

THE duty of the meat inspector is to provide clean, healthful, wholesome meat, for rich and poor alike. In these days when people are massed in large towns and cities, it is not always possible for the buyer to know from personal observation the source of his meat supply, and whether or not it comes from healthy animals. The purchaser at the retail store can determine as to the satisfactory appearance, price, and cut, but the source and previous treatment are almost a sealed book, and positively unknown to the majority of people.

The first step to solve the problem of a healthful meat supply, was taken by the Dominion government in September, 1907, when the Meat and Canned Goods Act was put in force, and executed by a staff of some fifty veterinarians, the Act being administered by the Health of Animals Branch of the Department of Agriculture. The officers of the department received special training by an authorized meat inspection course at the Chicago Veterinary College, together with practical instruction under the United States government officials at the Chicago packing houses. Since then, meat inspection has been added to the curriculum of the Ontario and Quebec Veterinary Colleges. With the authority of this law, the Minister of Agriculture may cause to be made by the above-mentioned inspectors, an examination, both ante mortem and post mortem, of all animals intended for food at any packing house, abattoir, etc., where meat or meat food products are prepared for interprovincial or foreign commerce. Before a corporation is allowed the privilege of exporting, the building and equipment must conform to the sanitary regulations laid down by law and verified by the inspector. The number of animals slaughtered under inspection is about one-half of the total slaughtered in Canada. This, we readily see, is a grave mistake, and a matter that will have to be dealt with sooner or later, when we consider the conditions met with in food-producing animals.

Read at a meeting of the Montreal Medico-Chirurgical Society.

It is a daily occurrence at the large packing houses to find from 10 to 20 per cent. of swine affected with tuberculosis, the percentage sometimes running very much higher. These infections vary from slight to generalized. Cattle and swine are both affected with this disease, but we meet with it in an advanced stage in cattle, on account of the length of life before slaughter. In one year, 3,309 carcasses were condemned, as well as 308,033 portions, for this disease alone. The larger percentage of tuberculosis in swine is accounted for by the amount of disease in dairy cattle, the swine being fed on the milk, and allowed access to the excreta of these animals. The alimentary tract of cattle throws off great numbers of tubercle bacilli, especially in the case of pulmonary tuberculosis, which is common in these animals. This I shall refer to at greater length when considering the milk question. If this disease were stamped out of the bovine (which has been found practicable by the "bang" system), swine would not be infected.

Other diseases, as actinomycosis (lump jaw), both primary and secondary affections, come under our notice. Although this disease is rarely transmissible to man, the thought of eating it is abhorrent, especially so when we consider the mixed infection as shown by the tumour. During the past year, 6,638 carcasses were met with. Then we have the cysticercus bovis and cellulosa, the cause of tape worm. This condition is more noticeable in fat, healthy-appearing western cattle, the carcasses when dressed being apparently normal. This disease, as suggested, is more prevalent on Western ranges, on account of the open closets, the rivers and streams generally overflowing in the spring, carrying the segment-infected faeces over, and to, the grazing districts. The coyotes and prairie wolves tend to spread these infections over the prairies, where the cattle readily become infected. The same condition is met with in the Eastern Townships, as regards surface closets, which become flooded during the rainy season and during freshets. Last year 354 carcasses came under our notice. *Cysticercus tenuicollis*, from the *Tænia marginata* of the dog, infects the serous membranes of sheep and pigs. These cysts and affected organs are immediately destroyed on inspection. Then we may notice a hog showing a few harmless looking bites and bruised marks on the skin, which ordinarily would be passed by; but under an inspector the result of the toxic condition in the flesh is readily detected. This is *Tænia echinococcus*, one of the most serious conditions.

The same can be said of pyæmia and septicæmia, which are

very prevalent in food-producing animals, over 12,000 septic conditions coming under our notice in one year, a great many of which were condemned outright. It is a common occurrence to find animals suffering from different inflammations the result of traumatism, with its usual complications, or, as is often the case with pericarditis in cattle, the result of direct infection from the stomach. These and inflammations from other causes render the meat unfit for food. Then we meet with jaundice, uræmia, anæmia and other abnormal blood conditions. The hog with the abnormal sexual smell is very often found; and though the meat may not be injurious, it is often very offensive and repugnant, and is not allowed to be sold for food. This is usual in the cryptorchid hogs. In the castrated animal we very often find septic conditions, the result of infection of the open wound, often causing septicæmia. The actinomyces are introduced here, setting up characteristic tumours in this region.

Parturition and the conditions accompanying it receive a critical examination under the inspector, as well as emaciation, the result of a great many different diseases and conditions. The majority of the above-mentioned diseases cannot be detected by casual observation of the live animal, and only on post mortem examination can we detect some of them. Also, in the majority of these diseases the lesion can be trimmed out by the unscrupulous butchers not under inspection, and the meat placed on the market. Such meat, while seemingly normal and fit for food, is detrimental to the health of the consumer, or of a low food value. And here I might call attention to the condition of swine when received at the slaughter house at this time of year. It is not uncommon to find, on ante mortem examination, animals that have become frozen in transit. I have seen hogs whose sides were frozen solid, and when tapped with the knuckles resounded as though one were striking a board. Then again, in the summer, cars are very much overloaded by the drover, causing suffocation of many animals. These are matters which might well be taken up by the Humane Societies, in the endeavour to make the transportation companies provide proper cars during the different seasons of the year.

Parasitic conditions of the different edible organs are met with to a great extent. The condemnations in one year from this cause amounted to 63,130 portions.

Immaturity, especially noticeable in calves, is the cause of a great many condemnations, not only on account of the age, but also for the septic conditions in regard to the umbilicus. In Montreal alone last year they amounted to over 10,000 animals.

In the case of slaughter houses which are uninspected, there are a great many features which are not only objectionable, but dangerous to the public health. We are all well acquainted with the smell emanating from the small country slaughter house, and thereby know that it is foul and filthy. The location is often some obscure stable, situated on a low-lying swampy place or on the banks of small streams, the streams carrying the pollution to our rivers and hence to our towns, through the water and ice, with the attendant results. Then we know that the feeding of offal to swine is practised here, that rats, flies, dogs and other carriers of disease have access to this offal and filth, and that such diseases as tuberculosis, hog cholera, and other contagious affections, have been disseminated by this means, as well as tapeworm, and other parasites, some of which are harmful to man. And it is under conditions similar to the above, that about one-third of our meat supply is prepared.

Under inspection the sanitary condition of the slaughter house is under the direction of the inspector, who sees that the requirements of hygiene are properly carried out. This is very important where food products are prepared and stored, when it is considered that 276,303 pounds of meat food products were condemned on re-inspection in one year, on account of being dirty, sour, tainted, or decomposed. When inspection is maintained the buyer is careful as to where he purchases his supply of food animals. An animal that is suspicious is rejected by him, with the result that the farmer or drover must sell to an uninspected house, where as a general thing he receives the same price, but will take less. Therefore, we have the majority of suspicious animals placed on the market through uninspected channels, the butcher in offering such for sale does not always do it wilfully, but through ignorance of diseased conditions.

COLD STORAGE. It might be well for us to deal for a few minutes with the cold storage situation, which we have been in the habit of viewing as a great factor in the problem of the high cost of living; let us now look at it from another point of view, namely, that of the sanitarian. By cold storage we mean a building used for the storage of food in which the temperature is held below 40° F. by refrigeration or ice, for 30 days or longer. It is said that when goods are at the turning point and the dealer is afraid of a monetary loss, he rushes them to cold storage, where they are frozen, if necessary, and held until a suitable time arrives to dispose of them. This is done in the case of poultry, eggs, cased and in bulk, meat, fish, game and other perishable goods.

To meet the interests of public health at this point, I am of the opinion that a strict inspection system should be inaugurated at all cold storage plants. Goods found to be unfit for food should be disposed of in a proper manner; the remainder, if in suitable packages to withstand handling, I think should be properly labeled and dated upon entry. Verified temperature readings should be made periodically, to insure regular temperature during storage. I have known accidents happen to the ice machine or conducting coils from rust, etc., necessitating cutting off the ammonia, thus causing a rise of temperature, which resulted in the condemnation of the perishable goods. Though there are a great many abuses of cold storage, under proper supervision it can be made a great means for good.

MILK—THE GREAT UNCOOKED FOOD OF MAN. I will now dwell for a few minutes on the question of the milk supply, which furnishes one-sixth of total food of the average family. This is a large subject, and in the time at my disposal, I shall be able to touch only the most important points. We know that moisture is the chief means of carrying bacteria and that milk is one of the great media, not only for the carrying but for the development and dissemination of them. Such diseases as tuberculosis, typhoid, scarlet fever, and diphtheria, are known to have been spread through the milk supply. The average citizen cannot determine the source and quality of his milk, or the sanitary conditions at the source of supply; but he wants pure, wholesome milk, and depends on those who know, or who should know, to protect him and his family. Milk must be kept free from contamination at the source of supply.

There are few real dairy stables, others are just farm barns with horses, cattle, pigs and hens in the same building, with often just a low board partition separating the animals. The ventilation is poor; there being no artificial means of heat, the cows are required to produce the necessary temperature at the sacrifice of ventilation and light, so necessary to the health of the animals. The water supply for drinking purposes and for washing utensils, is often from a well, unprotected from surface drainage, close to or in the barnyard, low-lying, and surrounded, as is sometimes the case, by foul stagnant pools. The stables are not cleaned out often enough, and the manure is placed near the stable door or windows, immediately behind the cattle. The ceilings and posts, are often covered with cobwebs. The floors of stables and stable-lofts are not tight, and allow dust to settle in the stable on the animals, pails,

and other utensils. The manure-covered flanks of milk-producing cows is a condition well known to all of us. It is unnecessary to go into detail as regards the unsanitary condition of some of our dairies. It is gratifying to know that a vigorous campaign is being conducted by our chief food inspector, Dr. Hood, who has mapped out a great, creditable campaign, which would be much more successful if he felt he had the undivided, active, moral support of the medical men of the city.

Regarding the dairy industry, we know that the commonest disease with which cows are affected is tuberculosis, and that the milk in some form reaches practically all persons. The one who does not use milk, cream, butter, cheese, or ice-cream daily, is an exception to the general rule, and the family that uses no fresh dairy product can hardly be said to exist. And here I might mention the fact that Quebec dairy products amounted to about \$45,000,000, last year. It has been proven beyond a doubt, by investigations and tests conducted by the American Department of Agriculture and other bodies, that the bacillus of tuberculosis is prevalent in the fæces of tubercular cattle. These animals are not able to expectorate the discharge from the lungs, in the same way as the human patient, and it is therefore swallowed and churned up with the food during the process of digestion, and excreted per rectum to the extent of 6 bacilli to one-thirtieth grain of faecal matter other than the mucous shreds which contain far more. The average cow passes 30 pounds of moist fæces a day, therefore a tubercular cow passes per rectum 37,800,000 tubercle bacilli per day, as shown by the investigations of Schrueder and Cotton, U.S. government experts.

The tubercular human patient can be taught to use various precautions that will reduce to a minimum the danger to health in his environment, but not so with the cow. Effective germicidal substances are too expensive, and their proper application to large masses of fæces daily is too difficult and troublesome for practical purposes.

The fæces of cattle are dropped everywhere in the surroundings of these animals, in the stable, field, barnyard, roadways. They are splashed on the bodies of cattle, and when cattle lie down, their bodies get coated with them, especially the parts near the udder. Fæces are thrown against the partitions of stalls and walls of stables, and are scattered about by their soiled tails on to the hands and clothing of the milkers. It is almost impossible to find the dairy, even where great precautions are taken, the milk from

which does not show traces of hair and fine particles of faecal matter. When we know how completely cattle faeces may be charged with tubercle bacilli, and how easily milk may be infected from this source, and contemplate this fact, keeping in mind the wide distribution that dairy products have, together with the results of recent investigations, we must conclude that the eradication of tuberculosis among cattle cannot be too vigorously urged or pursued.

The policy has been adopted by the provincial government of British Columbia, of eradicating tuberculosis by the district method. The provincial government are receiving the hearty coöperation of the federal authorities in this connexion, and it is to be hoped that the other provinces will take up this matter at no late date.

In order to get rid of these unsuspected, but dangerously tubercular, cattle,—and as a rule the animal does not show clinical symptoms unless the disease is far advanced,—we must resort to the use of tuberculin in the hands of a properly qualified man. Animals reacting should be removed from the herd, as well as those showing clinical symptoms. After years of observation, the tuberculin test has been shown to be a more nearly infallible means of diagnosis of this disease than any we have for diagnosis of other diseases in animal or man. Of the cows supplying milk to the city of Washington, 17 per cent. were found affected with tuberculosis. In New York State, 33·3 per cent. of all cattle reacted to the tuberculin test. And of the cows supplying milk to the city of Winnipeg, 70 per cent. were found to be tuberculous. Actinomycosis or lump jaw, as it is commonly called, which is generally seen in the maxilla of cattle, is also found in the udder. The discharge from an actinomycotic tumour generally contains pus-producing cocci, necessitating the prohibiting of the use of milk from such udders. Foot and mouth disease is transmissible to man through consumption of milk. Fortunately, this disease does not exist in this country. The only outbreak having been in imported cattle in quarantine, it was promptly stamped out by the government officer. The milk from animals suffering from anthrax, is highly dangerous. This disease is not frequent in this country now, owing to the strict measures pursued under the Animal Contagious Diseases Act by the federal Department of Agriculture. Cowpox renders milk unfit for food, as it may become contaminated from the pustules and ulcers on the teats and udders, and produce infection by the alimentary canal in young children.

A cow suffering from gastro-intestinal disorders produces an

inferior grade of milk, which may cause a similar condition in children. The presence of dairy cows affected with such septic conditions as puerperal sepsis, septic mammitis, diffuse phlegmon, suppurative wounds and extensive ulcerations, constitutes a grave danger to the milk supply, inasmuch as the milk may become infected with pus-producing organisms, among which the streptococci are capable of causing enteritis in man. The milk of all cows suffering from febrile conditions should be excluded from the market. Poisonous milk may be produced by cows having eaten poisonous plants, as the poisonous ivy, producing a nervous condition known to the veterinarians as "trembles." The milk of cows should not be used for at least five days subsequent to parturition, as the colostrum may produce diarrhoea, colic, and other digestive disturbances. Much more could be said concerning the conditions of milk when produced, but enough has been said to show the necessity of a system of rigid inspection of conditions at the source of supply.

Milk, instead of being immediately removed after milking and promptly cooled, is often left in the stable uncovered, thereby allowing contamination. The condition of the milk room is not always what it should be, the cans receiving careless treatment in the washing, dirt and sour milk being left in them. Washed with anything but boiling water, they are then placed face up in the open air during the day, allowing dust and dirt to settle in them, and when they receive the warm milk from the milk room, the natural result is an abnormally high bacterial count.

In conveying the milk to the city, and also transportation and delivery from retail wagons, it should be kept cool, at a temperature of 50° F., or under. The sanitary condition of the vendor's wagon is often much at fault, as are his clothing, hands, etc., and here he is often known to fill the empty bottles collected en route from bulk milk, this being done on the wagon. Can we imagine anything more disgusting or harmful than such a practice? I see this matter was taken up by the local Board of Health at the last meeting. Next we come to the shops where milk is sold, and here milk should be kept and sold in sealed bottles only, to prevent contamination, especially in the small house shops.

A few figures bearing on this subject might be useful here. In the city of Toronto, out of every 1,000 children born alive 160 die in the first year, or more than in the succeeding 40 years. In Ottawa the rate is 216 and in Montreal 270. In Ontario cities, out of every 1,000 children born alive, 16 more die than in New

York; 4 more than in Chicago; and 44 more than in London, Eng. In the United States a number equivalent to one-sixth of the birth rate die during the first year. Dr. Lafferty claims that 95 per cent. of children's deaths are due to the milk. Dr. Hastings attributes 90 per cent. to the same cause, and he further says that out of the 10,000 deaths of children in one year in Canada one-half are preventable.

The death rate in a number of American cities has been materially reduced since the enactment of a pure milk law.

As the result of repeated investigations, our ideal should be certified milk, and until that can be secured, pasteurization; and though by it we turn an aquarium into a cemetery, the disease-producing germs are killed by proper pasteurization. Any pasteurization will not do, this work done improperly is worse than not being done at all. If the inclination of the general public does not drive it to correct the evils to which it is exposed through the use of impure, infected and dirty milk, it should be borne in mind that common humanity imposes various sacred obligations, among which pure, wholesome milk for children ranks near to first place. We have no right to shirk this obligation, and would have no inclination to shirk or ignore it, if we took the time and trouble to investigate the number of deaths, especially among infants, directly due to contaminated milk. Most intelligent persons who read have some knowledge of the fact that numerous babies die from no other cause than the use of impure milk. Unfortunately, the frequency with which milk from tubercular cows causes tuberculosis is not so clearly apparent, because of the insidious, chronic character of the affection.

The Health Department was justified in ordering that every dog in Western Ontario be muzzled, because one child had died of rabies. Certificates are required before a doctor, druggist, or undertaker can practice, but any ignorant man can milk and send out this food which fills the coffins of the undertaker. It is the solemn duty of those having knowledge of these conditions to put forth their best efforts to protect the unsuspecting public, to awaken public sentiment, and whenever possible, to stimulate legislation.

I have hurried roughly over this vast question, trying to show the condition of milk when received by the consumer. The result of the use of such milk upon the public is better known to the medical practitioner than to the veterinarian, and considering this last phase of the question, I am of the opinion that the interests of the public would be materially advanced by the combined efforts of the medical officer and the veterinarian.

LIPOSIS PANCREATICA

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THE term "Liposis pancreatica" was suggested by Professor Adami as an appropriate name descriptive of the extensive fatty change found in the pancreatic glands of the cases briefly presented in this article. The three cases are worthy of note on account of the unusual findings in the pancreas of patients who suffered from diabetes and gangrene of the feet.

The existence of fat among the lobules of the pancreas is common in people who have passed the age of thirty-five or forty years. Fat spaces are frequently seen in microscopical sections of this gland, sometimes in large numbers, without any associated symptoms in any way assignable to the organ in question. In other cases, the occurrence of many fat globules along with some increase of the fibrous tissue produces very few, if any, symptoms, whilst in cases of diabetes coming to autopsy this condition is sometimes the only pathological abnormality found. The wide divergence of pathological findings observed in cases of diabetes is well-known to those who have had experience in the post-mortem room.

Another feature of interest in the cases herewith presented is the unimpaired microscopical appearance of the islands of Langerhans. It was formerly taught that changes in these structures were the principal factor in the causation of the disease, such changes consisting chiefly of a hyaline or fatty metamorphosis, to which the carbohydrate disturbances of diabetes were attributable. At present, however, there is much discussion about the real part played by the islands in this disease. It may be stated that many observers are of the opinion that they take very little, if any, part in the changes of carbohydrate metabolism, and that the prominent part hitherto assigned to them has been quite misplaced. My own experience has been that the islands of Langerhans in cases of diabetes very seldom show any definite abnormality. Dr. F. Homans, in a recent publication (1913) advances the opin-

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ion, based on experimental work, that there is no positive evidence that the islets are of vital importance to carbohydrate metabolism.

Another point about which there is much diversity of opinion is whether the islands of Langerhans are fixed, stable bodies, or are being formed continually from pancreatic acini. It may be stated that the American schools, as exemplified by Osler's "Modern Medicine," incline to the view that they are fixed, stable bodies, whilst the English school, judging from Allbutt and Rolleston's "System of Medicine," believes them to be in a constant process of formation. A commonly accepted view, to which the writer is inclined, regards the islets as fixed as the glomeruli of the kidney. Their exact function, however, is not positively known.

Whilst attention in these cases was directed to the pancreatic findings, yet the changes found in the other organs are worthy of note. The occurrence of advanced arteriosclerosis in the splenic artery of all three cases is interesting.

CASE 1. P. S., male, aged sixty-seven, entered the Royal Victoria Hospital September 25th, 1911, under the care of Dr. E. Archibald, with gangrene of the fourth and fifth toes of the right foot, and a small area on the dorsum of the same foot, also beginning gangrene on the second toe of the left foot. Three weeks before, the little toe of the right foot began to get dark in colour, then the next toe, and shortly after the skin of the dorsum of the foot. No pain. He had been drinking large quantities of water daily for some time; he voided frequently, and large amounts. He was very drowsy when he entered; the tongue was dry and coated. His arteries were atheromatous. His urine contained much sugar; there was no acetone or diacetic acid. A few days after admission his right leg was amputated at the knee joint; about one week later the flap began to slough, and the beginning gangrene of the other foot became pronounced. He died two weeks after his right leg was amputated.

PRINCIPAL AUTOPSY FINDINGS: Atrophy of pancreas; gangrene; unilobular cirrhosis of liver; extreme calcareous atheroma of blood vessels; acute toxic nephritis; body of good physique, very fat, prominent chest; length 160 cm. Right leg amputated at the knee. Second toe on left foot quite gangrenous, and the big toe commencing to become so. Lung: old apical pleurisy. Aorta markedly atheromatous. Abdomen: mesenteric glands were not enlarged; mesentery very fatty; deep inguinal glands were enlarged.

The liver weighed 1,675 grms., and was firm, with apparently

increased connective tissue, poor differentiation; blood vessels full; surface smooth, with irregular, macular, pale areas through it. The cut surface was firm, and showed a striking variegated appearance, owing to discrete, round, yellow lobules lying among the brown liver tissue; the consistence was increased. Sections showed cloudly swelling, marked fatty infiltration and bile pigmentation. The capsule was normal, and the interstitial tissue was not increased. The lobules were with difficulty outlined. Central vessels were of moderate size. The cells immediately about were degenerative-looking; their nuclei were poorly staining, and the cytoplasm contained much bile pigment; in the majority of the cells fat globules occurred, many of them quite large. The liver cells were swollen and markedly reticulated. In the intermediate and outer zones of the lobules, the cells were well defined, and stained better than those about the central vessels. Some of the nuclei were swollen and perfectly clear, with a well marked nuclear membrane; others were small, showed punctate chromatic substance, and contained a large nucleolus. Others were more deeply stained. The portal system was normal in appearance, no inflammatory celled infiltration being present.

The *kidneys* weighed 405 grms., and were surrounded by much fat; the capsule stripped with moderate ease. The surface was lobulated, cortex pale, glomeruli not visible; medulla pale; pelvis normal. Sections: There was no increase of interstitial tissue, nor swelling of the capsule. Many of the glomeruli had undergone a hyaline change. The epithelium of the tubules and the glomeruli was swollen, and in places desquamated; the nuclei of the cells were not shown in many; some of the tufts were divided into three and four designs. The blood vessels were distinctly congested throughout. Acute toxic engrafted on a chronic parenchymatous nephritis.

Spleen: Weight 290 grms., flabby, with rounded edges and smooth surface; organ pale; cut surface flat, trabeculae not conspicuous, colour pale red. There were no adhesions. Sections showed distinct thickening of the capsule and the trabeculae. The Malpighian bodies were with great difficulty defined; the cells present were chiefly lymphocytes, intermingled with endothelials, numerous eosinophiles, and a few phagocytes. The edges were invaded by red blood cells. The central vessels were small. The splenic pulp was markedly congested. The sinuses were dilated and filled with red blood cells.

The *pancreas* measured 20×4 cm., and was converted into

a mass of fat, with only here and there an indication of pancreatic tissue; it was difficult to distinguish it from mesenteric fat; but for the fact that it occupied the usual pancreatic situation, it would have been easily overlooked. On cutting into it there was found extensive calcareous degeneration of the arteries. Sections showed a few small, irregular patches of pancreatic tissue lying in an abundant fatty stroma. The fibrous stroma was to be seen, in a few instances, containing pancreatic ducts, which had preserved their lining and showed no inflammatory cell invasion about them. The glandular tissue was diminished greatly. The individual pancreatic cells showed some vacuolation, and were somewhat shrunken. The islands of Langerhans showed no pathological change. The cells were uniform in size and shape, stained deeply, and showed an absence of infiltration. Another point of interest in the sections was that in many places the fat spaces entirely occupied the area formerly occupied by pancreatic lobules, as if the entire lobule had turned into fatty tissue.

CASE 2. R. W., female, aged fifty-four, admitted December 14th, 1912, to the service of Dr. Armstrong. Complaints and history: sore toe, passing large quantities of urine, loss of appetite and weight. She was treated for morphinism for one month seventeen years previously at the Royal Victoria Hospital; and one year later a complete hysterectomy for multiple fibroids was performed. In July, 1898, she was readmitted with typhoid, one month ill. In August, 1902, she was treated for gastric ulcer, three weeks ill. In 1910, she was again in the Royal Victoria Hospital with palpitation, headaches, cedema of the extremities. Sugar was found in the urine, also albumen. She had lost eighty-five pounds in weight since she was in before. About 1904, she noticed she was passing a larger quantity of urine than usual. In 1908 her husband was accidentally killed, and from this she dates a loss of appetite and weight, and increased quantity of urine passed. Six weeks before entrance to hospital a small ulcer appeared on the inner side of the toe. It became larger and inflammation spread up the foot, and in spite of incisions and free drainage of pus, gangrene appeared nine days after she entered. Her urine showed specific gravity 1,032, acid, much sugar (4 per cent.), acetone and diacetic acid. On January 3rd, 1913, she died.

POST-MORTEM FINDINGS: Diabetes mellitus; gangrene of foot; fat necrosis around pancreas; atrophy of tail of pancreas; extreme atheroma of splenic artery; multiple foci of atheroma in pulmonary artery; obsolete tuberculosis at left apex; multiple submucous

ecchymoses of stomach; passive congestion of liver; hyaloseritis of spleen; cavitation of adrenals.

Body of good nutrition, right foot gangrenous. The main points of interest were the marked degree of atheroma throughout the arteries and even the main veins; and the small size of the pancreas with the presence of fat necrosis in its vicinity. The subcutaneous fat measured 3.5 cm. in thickness. The omentum was adherent to the abdominal wall. The aorta was markedly atheromatous. The liver showed no macroscopical abnormalities; section disclosed some fatty infiltration and congestion, with the sinuses containing many iron-pigment-bearing cells.

Pancreas: Weight 80 grms. The tail of the pancreas was very small, the tissue hard. Splenic artery markedly atheromatous; fat necrosis present here and there in the gastro-hepatic omentum. Sections showed a great increase in the amount of interlobular connective tissue, wide bundles separating the acini from each other. There was also a slight intralobular increase. There were also numerous large fat spaces throughout the section. The acini were small. The islands were not numerous, and no abnormality was observed in them.

Spleen: Arteries markedly atheromatous. Hyaloseritis was marked; the pulp was diffuent and pale, and the Malpighian bodies hardly noticeable. Trabeculae were not increased. Sections confirmed the macroscopical findings. The kidneys and adrenals showed cloudy swelling.

CASE 3. A. L., female, aged eighty-two, admitted October 25th, 1912, under care of Dr. Garrow, complaining of gangrene of the foot. The gangrene had been gradually becoming worse for some weeks, and when she entered, it had spread half way up dorsum of foot. It was possible to feel pulsations in the femoral artery high up in the thigh, but none could be felt in the popliteal. Sugar and albumen were present in large quantities in the urine. The specific gravity was 1032. Three days after entrance to the ward she died in coma.

PRINCIPAL POST-MORTEM FINDINGS: Diabetic gangrene of left foot; atrophy of pancreas; calcareous arteriosclerosis; dilated heart; diffuse emphysema of lungs; arteriosclerotic kidneys; cavitated adrenals; diffuent spleen; emaciation (but fatty omentum).

The heart weighed 375 grms., and was large and flabby. The edges of the mitral valve were thick and nodular; septal flap opaque; two or three nodules were fused together and converted into a large chalky mass containing laminated calcareous plates.

Coronary orifices calcified. Aorta showed marked arteriosclerosis with many ulcers but no nodules. The abdominal aorta was calcified all round. The trachea and bronchi were congested. Both lungs were emphysematous and cedematous; and weighed 850 grms.

Liver: Weight 1,375 grms., was of moderate size, very flabby; surface smooth and mottled with ochre yellow foci of fat. Cut surface friable, dark and full of blood. There was apparently much fatty change, and no increase in connective tissue. The organ was passively congested. The gall-bladder showed thickened walls converted into one calcareous plate. Sections of the liver showed passive congestion, and marked fatty degeneration, especially in the neighbourhood of the central veins. *Pancreas:* weight 80 grms.; it was soft and almost indistinguishable amidst the fatty tissue enclosing it. The splenic artery was very atheromatous. There was no fat necrosis. Sections showed marked change of the pancreatic tissue. In sections through the body of the pancreas a marked inter-and-intra-lobular fibrosis was present. Many of the acini were very small. The islands were numerous, of moderate size, well formed, and showed good preservation of their cells. The blood vessel walls were markedly thickened, both intima and media being involved. Fatty degeneration had occurred throughout the sections, in places involving entire lobules. Sections through other portions of the organ showed the same characteristics.

The *spleen* weighed 110 grms., it was very flabby and pale; on section the trabeculae were inconspicuous, and the Malpighian bodies were not visible. Histologically it presented an angiomatous appearance with marked dilation of the lymph spaces, the lumina filled with colloid material, in which occasional clusters of red blood cells might be seen. The Malpighian bodies were not differentiated. The trabeculae had undergone a hyaline change. The blood vessels were prominent, and their walls were thick. Passive congestion and lymphangioma.

The kidneys showed necrosis of the epithelium, and chronic glomerular nephritis with some increase of interstitial tissue. A study of one hundred and eighty-three cases of diabetes led Weichselbaum to classify the changes in the islands of Langerhans into the following groups; (1) hydrops of the islands, followed by atrophy; accompanied by atrophy of the pancreatic acini to a varying extent. This form is seen frequently in youth. Just as new liver tissue is formed in cirrhosis, so new islands may arise in the

pancreatic tissue. (2) Chronic interstitial pancreatitis, leading to connective tissue overgrowth in the islands, with subsequent sclerosis and atrophy. This form is associated with arteriosclerosis of the pancreatic arteries or with excessive deposition of fat. The parenchyma atrophies to a considerable extent as well. This form runs a very chronic course, and is seen frequently in old age. (3) Hyaline degeneration of the islands. This form is rarely seen alone, being usually associated with lesions of Class 2, and is met with under similar conditions.

The cases which form the subject of this paper evidently went through different phases of degenerative changes, as far as the pancreas was concerned. Probably the first change was one of arteriosclerosis in the arteries of the organ. This may be considered primary on account of its moderate extent and its occurrence in each case. Following this was the connective tissue change, the remains of which were visible here and there throughout the organ. After invading large areas, it was replaced by extensive fatty deposition, until, in two cases, practically the entire organ had disappeared. It would be difficult to conjecture at what stage the glycosuria supervened, or the relation between the fat replacement and the pancreatic ferments.

It is proposed to publish a statistical report upon the frequency with which the various changes possible in pancreatic tissue have been met with in the autopsy series of the Royal Victoria Hospital. The writer desires to express his thanks to Professor Adami for suggestions received in the preparation of this short paper, and to Dr. O. C. Gruner, pathologist to the Royal Victoria Hospital, for permission to study the organs of the cases reported.

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FOUR hundred and eighteen cases of measles occurred in Ottawa during March; three of these were fatal. There were thirty-two cases of diphtheria, sixteen of scarlet fever, eight of smallpox, and two of typhoid fever.

PRIMARY MALIGNANT NEOPLASM OF THE
FALLOPIAN TUBE

BY FRASER B. GURD, B.A., M.D.

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ALTHOUGH enlargements of the Fallopian tubes, due to various infective and mechanical agencies, are by no means infrequently encountered, true neoplastic tumour formation is a comparative rarity. Inasmuch, also, as carcinomata, which constitute the most common malignant blastomata of this organ, present, in a large percentage of cases, characteristic clinical evidence of their presence, and since the accompanying case exemplifies certain typical symptoms, the author believes it to be worthy of publication in this manner.

Both sarcomata and carcinomata, as well as a certain mixed tissue type of neoplasm, which is considered by many pathologists to be an endothelioma, are occasionally encountered as primary tumours of the Fallopian tubes. Of these, carcinomata, similar in type to the one described in this paper, are the more common. Doran (*Journal of Obstetrics and Gynaecology of the British Empire*, 1904, Vol. vi., p. 285) in 1904 collected sixty-two cases of carcinomata. In this paper he gives a complete bibliography and makes a very careful analysis of the predominant signs and symptoms of the condition. The most common type of carcinoma is distinctly papilliform in type. Occasionally such tumours protrude as a cauliflower-like mass from the abdominal ostium and may in such cases metastasize by implantation over the peritoneum. In the remaining smaller percentage of carcinomata, the histologic appearance is that of a simple medullary type of epithelial neoplasm. It is to the latter group that the author's case belongs.

Briefly stated the history of the case is as follows: The patient, Mrs. H., aged forty-six years, is the mother of five healthy children, the youngest being nine years old. She has had no miscarriages, and previous to the present illness had been free from any symptoms referable to disease of the pelvic organs. This last mentioned fact deserves special note, since it is the rule in cases of tubal carcinoma

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for the patient to have had previous symptoms of salpingitis. About the middle of February, 1912, the patient commenced to feel less energetic than had been her custom, becoming easily tired. She was given a tonic but did not appear to improve. She gradually became more anæmic and less able to carry out her daily simple household tasks; she did not, however, find it necessary to remain in bed. In May her menstrual period, which had been constantly regular, every twenty-eight days, painless, and moderate in amount, was delayed seven days. The patient inserted a glycerine tampon in the vagina, and menstruation commenced at once and was more profuse than usual. This flow continued for four days.

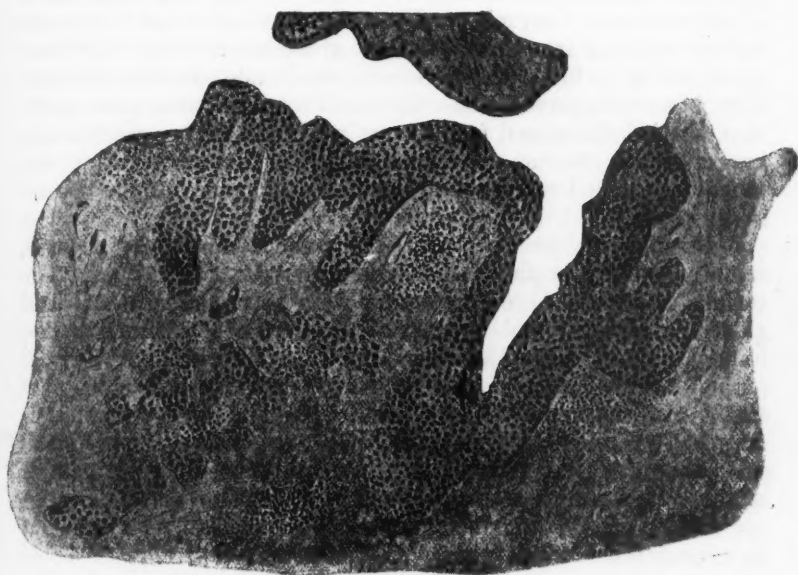
About the first of June, 1912, the patient began to suffer from a profuse, watery, slightly purulent discharge of a somewhat heavy but by no means disagreeable odour. This discharge was considerably more profuse at night, necessitating the use of two napkins during that time, and one during the day. She did not take to her bed although she did not feel strong enough to do much more than move from one room to another and out on to the verandah.

I first saw the patient on June 19th. At this date she appeared well nourished, but very anæmic (hæmoglobin 60 per cent.) with dark circles beneath the eyes. Her pulse rate lying in bed varied between ninety and ninety-eight. She was running an afternoon fever of 99.4° to 100° . Abdominal examination at this time was negative, nor did she complain of any pain whatever. Pelvic examination showed in addition to a lacerated cervix and a uterus which was placed somewhat low in the pelvis—but not enlarged or soft—a small mass to the left of the uterus, apparently $5 \times 3 \times 3$ cm. in size. This mass was firm, movable, and slightly tender. A leucocyte count, performed June 24th, showed a total count of 12,000, 73 per cent. being polymorphonuclear leucocytes.

From the history of the case and the findings at examination, a probable diagnosis of pyosalpinx, or possibly ectopic gestation, was made, and operation advised. As the patient's menstrual period was about due, operation was delayed until July 8th, as it was not believed that the condition was of any great urgency. During the intervening period, the patient remained in bed. She also stated that she felt, at times, pain on the left side and in the back, symptoms of which she had never before complained.

OPERATION: Examination under ether revealed the fact that during the two weeks intervening since the last previous examination the mass had increased rapidly in size. The uterus was curetted, the scrapings removed being negative as regards patho-

logical changes. With the patient in the Trendelenberg position, the abdomen was opened through a left rectus incision. A moderate amount of somewhat turbid blood-stained fluid welled up into the incision. Upon examination, it was discovered that the omentum, several coils of small intestine and the sigmoid, were more or less closely adherent to an egg-shaped, greyish pink, glistening, moderately firm mass, which measured $12 \times 8 \times 7$ cm. in size and resembled in appearance a sarcoma of the ovary. The coils of the small intestine were separated without much difficulty and the omentum divided between ligatures. The sigmoid was so densely



Low power drawing of tumour close to uterine extremity of tube

adherent that I was anxious to resect that portion of the intestine involved; the condition of the patient, however, precluded such a procedure, so that I adopted the more simple method of cutting through with a sharp scalpel the wall of the sigmoid down to the submucosa, thus leaving the musculature and superficial layers of the intestine attached to the tumour. The injured sigmoid was then "turned in" and reinforced by Czerny-Lembert sutures. As the uterus appeared to be normal and the patient's condition

none too good, the left cornu alone was excised and the tumour removed along with the left ovary and the greater part of the left broad ligament. The pelvis was carefully palpated and no signs of lymphatic or other metastases were noticeable. The right appendages were likewise apparently normal

The patient stood the operation somewhat poorly, and about twenty minutes after return to the ward collapsed. She became a greyish white colour and pulseless, although the heart-beat, counted by means of the stethoscope, did not rise above 120. She remained in that condition for about four hours, during which time she received continuous saline per rectum, and small doses of strychnine and camphor. Upon the first and second days she suffered severely from distension, for which she received four doses of eserine, gr. 1-100, with good effect. Convalescence was naturally slow, but at the present time, three and a half months after operation, she is looking and feeling very well indeed; her anæmia has improved and she has put on weight. The last examination, one month ago, failed to reveal any evidence of return of the disease in the pelvis.*

DESCRIPTION OF TUMOUR: The tumour consists of an oval, smooth, moderately firm mass, measuring $12 \times 8 \times 7$ cm. The surface, except in those areas which were adherent, is smooth and glistening, greyish pink in colour. The mass is situated in the Fallopian tube. Upon the uterine side there is a length of 1.5 cm. of normal-looking Fallopian tube which enters and is lost in the substance of the tumour. This uterine extremity of the tumour is deep red in colour and presents upon the surface several small sub-serous cysts. Upon section, the more or less normal portion of the tube contains a small quantity of purulent material. The cut surface of the tumour is glistening and smooth, homogeneous in appearance, and of a pale pinkish grey colour. There is no evidence of necrosis at any part. The tumour tissue is friable, and suggests the presence, when torn by the finger, of a very cellular mass with a delicate fibrous stroma.

Microscopic Examination: The tumour is composed of spindle and polyhedral-shaped cells, taking the basic stain, arranged in irregular shaped, clean-cut masses, resembling in many respects the so-called rodent ulcer of the face. The tumour cell masses are surrounded by a scant, loose, connective-tissue stroma in which are thin-walled blood vessels. The tumour cells show frequent

*Patient's condition has continued to improve, and seven months after operation she states that she feels better than she has done for years.

mitoses. In sections cut from that portion proximal to the uterus, the morphology of the tube is readily made out. The lumen contains an exudate composed of polymorphonuclear and plasma cells and débris. Here and there throughout the wall are masses of tumour cells which in places can be seen to penetrate the mucosa. Beneath the serosa are seen numerous nodular collections of lymphoid and plasma cells. Sections cut from the uterine extremity are devoid of tumour cells.

DISCUSSION: In many respects this tumour is typical of its kind. It is a carcinoma of the medullary type, arising primarily in the Fallopian tube. Its growth was extremely rapid and accompanied by marked anæmia and loss of vigour, but without the cachexia that is noted in carcinoma cases in which the tumour contains marked areas of necrosis. According to Doran's analysis, such tumours occur almost invariably about the time of menopause, either before or after. In the sixty-two cases collected by him, only four occurred in individuals under forty years of age. The very profuse, yellow, watery discharge which was such a marked symptom in our case is very characteristic of Fallopian tube tumours of this nature, and is absent only when the uterine end of the tube is obliterated by coincident inflammatory changes.

The great majority of cases give a distinct history of inflammatory disease of the Fallopian tube, it being believed by many that there is a direct relationship between the inflammatory process and the papilliform overgrowth of the mucosa, analogous to that which occurs in coccidial disease in the rabbit and in certain cases of chronic inflammation—bilharzia, etc.—in the large bowel and bladder. In the case reported in this paper, there is no evidence, direct or indirect, proving the presence of such an infectious process antedating the tumour growth, although the presence of pus in the lumen of the tube and the chronic inflammatory changes in the wall indicate that such may have been present.

This type of tumour is interesting inasmuch as, although it is a very rapidly growing tumour and is obviously a carcinoma, there is no necrosis of the cell masses such as occurs in carcinomata of other organs having a like morphology. As a result of the rapid growth and absence of necrosis, the symptoms and constitutional signs are those rather of sarcoma than of the typical cachexia of carcinoma.

Editorial

THE ANNUAL MEETING

THE medical profession in London are making every effort to make the next annual meeting of the Canadian Medical Association an unqualified success. The meeting will be held on the 24th, 25th, 26th, and 27th of June. Already arrangements are well advanced. The first two days will be devoted to sections in medicine, surgery, gynæcology and obstetrics, pathology, public health, eye, ear, nose and throat, and x-rays. On the morning of the third day, Dr. McPhedran, of Toronto, will open a discussion on diseases of the stomach; and Dr. Stockton, of Buffalo; Dr. Martin, of Montreal; Dr. Aaron, of Detroit; H. J. Patterson, F.R.C.S., and others, will take part. On the afternoon of the same day a symposium on the thyroid gland will occupy the attention of the association. Dr. Ochsner, of Chicago, will open the discussion on the surgical aspects of disease of the thyroid. On Friday morning, Dr. Billings, of Chicago, will conduct a medical clinic before the association. In the afternoon Dr. J. B. Murphy, of Chicago, will give a lantern demonstration on surgical diseases of the bones and joints. Dr. Emil Beck, of Chicago, will give a lantern demonstration entitled, "Eight years' experience with bismuth paste in the treatment of sinuses." Dr. Gallie and Dr. Robinson, of Toronto, will contribute a lantern demonstration of experiments in bone transplantation. The presidential address will fall to Dr. H. A. McCallum, of London, the president-elect; the address in medicine will be given by Dr. Llewellys Barker, of Johns Hopkins, and the address in gynæcology by Dr. Cullen, of Baltimore. A definite announcement of the programme will be made in the next issue.

Arrangements have been made with the transportation companies for reduced fares, on the convention certificate plan, from all points in Canada. Physicians attending the meeting—and this applies equally to their wives and other members of their families accompanying them—will have single fare for the return journey, provided there is an attendance of three hundred from all over Canada, paying a fare of more than fifty cents. Each member when starting on the journey must obtain from the ticket agent a standard certificate, properly filled in and signed by him. This certificate will be endorsed at London, first, by the secretary of the association, and secondly, by a special agent who will be in attendance at the meeting on June 25th and 26th for this purpose. He will collect twenty-five cents in respect of each certificate, which will then entitle the holder to a return ticket to his starting-point without further charge. From Fort William, Ontario, and all points east, tickets for the going journey must be purchased between the dates June 20th and 26th, both inclusive, and properly validated certificates will be honoured for tickets for the return journey up to and including July 1st. From points west of Fort William in Ontario, Manitoba, Saskatchewan, and Alberta, these dates will be June 18th to 22nd, and July 12th, respectively.

From points in British Columbia the Canadian Pacific Railway has granted the association the convention certificate rates. The dates on which tickets may be purchased have not yet been decided, but will probably be June 16th to 20th. For those to whom the time-limits or other restrictions may be inconvenient, the summer tourist rates, approximately a fare and a third, will be available over both the Canadian and American transcontinental lines.

All the members, except those who may desire to prolong their journey beyond the prescribed limits, are urged to buy their tickets on this convention certificate plan, being careful to take a receipt from the ticket agent for the fare paid. Those who perhaps have only a short distance to go, and who

may think it unnecessary, in view of the small expense, to take their tickets on this plan, will be asked at the meeting to give the return coupons of their tickets to the secretary, for submission to the special agent, in order that they may help to bring up the total of the convention certificates to the required three hundred.

London is one of the most attractive cities in the Dominion, especially in the summer months, and this fact, coupled with the outstanding reputation of a large number of the men who are to participate in the programme, should ensure a record attendance. The Forest City promises its guests a generous hospitality on the occasion of this meeting.

THE POSITION OF THE LABORATORY WORKER

THE development of the laboratory worker as a new order of medical man, one who does not come into contact with patients, or with their fees, if it does not demand a new chapter in the code of medical ethics, necessitates at the least some revision of that code. The code lays down that the member of our profession who has made a discovery fraught, as he believes, with benefit to his fellows, should freely communicate that discovery to his professional brethren with the intent that all should be able to utilize it for the good of their patients and of humanity at large. As regards the laboratory worker and his interpretation of this section, two questions may be asked: first, is it the intention of the code that the medical discoverer should reap no pecuniary benefit whatsoever from his discovery? and, second, is it intended that those outside the profession, the wholesale drug manufacturers and others, are free to reap the profits accruing from the manufacture and exploitation of a medical discovery, whereas the discoverer or inventor himself is to be satisfied with the naked virtue of having benefited his kind?

These, it will be seen, are very delicate questions, and require extreme caution in their answer. With the loftiest ethical standard, your practising physician or surgeon who makes an advance in treatment is in a position to reap a pecuniary advantage from the same; it becomes widely known that he is the originator of the new method and, even though he publishes the details broadcast, patients prefer to be treated at first hand: are willing to pay enhanced fees for such treatment: and, as a consequence, his position, his practice, and his income are materially improved. Your laboratory worker has no such opportunities. No less than the practising physician, he is apt to have a family, actual or prospective, whose future is to him a matter of some concern. If he is to receive no benefit from his discovery beyond the five hundred to one thousand dollar increase in his stipend, which a grateful university may grant him at the expiration of five or ten years, and if he is to respect the code of medical ethics as at present laid down, his only alternative is to follow the example of Sir Almroth Wright, give up the life of the laboratory to which he is become best fitted by long years of research, give up the prospects of further research work, and, from being a man of science, he must consent to be an inhabitant of some Harley Street, and to charge fees for carrying out the technique which he has elaborated, such as would be charged by a first-class surgeon. This is wholly ethical, but it must be admitted is, if not soul-destroying, not exactly self-respecting.

Is it proper and fitting also that purely commercial concerns, however admirable their methods of manufacture, should acquire large fortunes from the discoveries of the laboratory man, should for example, make their thousands out of an antitoxin horse, and that he should receive not a cent of recompense? It is all very well to say that "Verily they have their reward"; but how about Johnnie's schooling and Dorothy's coming-out dress, and, most pressing of all, madame's social aspirations?

But if we acknowledge that the medical discoverer deserves and should be afforded a recompense in proportion to the magnitude of his service towards his kind, we are far from being prepared to say that he should be permitted to patent his discovery, or to peddle it among rival commercial houses, selecting as his agent the firm which offers him the highest royalty: that would be utterly repugnant to all self-respecting medical men. The only satisfactory solution that we can see is that immunological and other discoveries of like order be given over to the State, with the understanding that the State undertake to control standardization and distribution of them at a reasonable profit; that the State be responsible for disposing of the right of manufacture to other States, it being left to a healthy public opinion to instruct the Government as to the recompense to be offered the original discoverer by a grateful people. The State, that is, should take out the necessary patents, and if unwilling itself through its scientific departments to undertake the manufacture of a particular preparation, it should have the power to dispose of the right to manufacture to responsible commercial houses for a royalty and under such conditions as to permit its experts to inspect and supervise the course of preparation.

THE BRITISH COLUMBIA HOSPITAL ACT

AT the last session of the British Columbia legislature recently ended, important amendments were made and passed in connexion with the Hospital Act. The new piece of legislation is known as "The Hospital Act Amendment Act" and was introduced by the provincial secretary, Dr. H. Esson Young. The old Hospital Act had been found inadequate to meet the many varied requirements brought about by the rapid development of hospital work in British Columbia, and the new Act is largely the result of the representations and recommendations made to the provincial

secretary by the governing authorities of the Vancouver General Hospital and the Council of the College of Physicians and Surgeons of British Columbia, although important additions, notably that dealing with "facilities for university medical students," were introduced by Dr. Young himself.

Section 7 of the new Act deals with the liability of a municipality for the payment of hospital fees on indigent cases arising in the municipality but treated in hospitals outside of the municipality. The city of Vancouver, surrounded as it is by three or four thickly settled municipalities, none of whom possess a public hospital, has in the past treated in its general hospital hundreds of indigent cases arising in these outside districts, for which no charge could be collected by the hospital.

The Vancouver General Hospital has a fairly large annual deficit, but what growing hospital has not? Yet its directors believed a considerable proportion of the yearly shortage could be eliminated if the cost of maintenance of indigent patients coming from outside the city were paid for by the municipality from whence they came. Hence the interest in Section 7, not only of the Vancouver General Hospital, but all the other provincial hospitals.

The Section reads as follows:

"1. The corporation of the municipality in which an indigent person who has resided for at least thirty days in said municipality and is admitted to a hospital receiving aid under this Act is resident at the time of his admission shall be liable to pay to the governing body of the hospital the charges for his treatment.

"2. A municipal corporation may agree with the trustees or other governing body of the hospital to pay a fixed annual grant in lieu of its liability for the maintenance of any patient admitted to such hospital from the municipality.

"3. Where there is no such agreement, and any person is admitted as a patient to any hospital receiving aid under this Act, the superintendent of such hospital shall by registered

post notify the clerk of the municipality of which such patient represents himself as being a resident that he has been admitted to the hospital, giving such particulars as may be ascertainable to enable the clerk to identify the patient.

"4. No hospital shall charge against a municipal corporation for the maintenance of any patient coming under the conditions of subsection (1) of the section, a higher rate than one dollar per day.

"5. Upon payment by a municipal corporation of the charges of a hospital for the treatment of a patient, such patient or his executors or administrators shall be liable for the amount so paid, as for a debt due to such municipal corporation."

Part two of the new Act deals with private hospitals. The purpose of the government in introducing this amendment was to meet the demands of both the general public and the medical profession for a proper and efficient supervision of such private hospitals. Various abuses having crept into the conduct and management of some of these private institutions, it was deemed advisable by the government to make them all amenable to the regulations set forth under this part of the Act. The work of inspection will be carried out by an inspector, a medical man appointed by the government.

The new Act provides that all private hospitals must be licensed. The application for license must be accompanied by a detailed statement and description—prescribed in the Act—of the building and its equipment. A license is not granted to any person whose character and fitness is not proven to the satisfaction of the provincial secretary. The Act defines the terms, House; Maternity Hospital; Medical, Surgical and Maternity Hospital; Private Hospital; Patient.

Clause 17 deals with revocation of license. Under this head the government has power to revoke or cancel a license for just cause. The decision of the provincial secretary is final and conclusive and shall not be questioned in any

court or in any proceeding. Section 19 provides that a hospital must always be in charge of a superintendent who shall be either a legally qualified medical man or a graduate trained nurse. Section 20 deals with the register of patients. A complete and detailed report on each case must be kept. Section 22 deals with overcrowding of patients in hospitals.

Penalties, in the form of fines up to two hundred dollars, are prescribed in cases of infraction of the Act and are recoverable under the "Summary Convictions Act." The "burden of proof" in any prosecution for an offence under this Act shall be upon the person charged.

Dr. Young is to be congratulated for this practical and efficient piece of legislation, while the profession is to be congratulated that one of its members holds the responsible position of provincial secretary and minister of education to whose efforts are due, in addition to the Hospital Act, the British Columbia Medical Act and the British Columbia University Act, for all of which the general public owes a debt of gratitude to Dr. Young.

MEDICAL POSTGRADUATE COURSE

WE have received information concerning the postgraduate course which McGill intends to give this summer; and inasmuch as the plan adopted differs in principle from that of previous years, we think it well to call attention to it in this way. Hitherto the plan of the course, speaking generally, has been that of providing instruction in all the ordinary branches of medicine, in return for a lump sum for the whole course. The curriculum was in all essential respects the same as that provided for fifth year students, and the whole day was filled up with various clinics, lectures, and demonstrations, while the course lasted for six weeks. This plan gave an excellent opportunity to the postgraduate whose chief aim was to review his general work, but it left

out of account those who desired to improve themselves in special departments. Experience has shown that a general course of this nature is not entirely successful, either in attracting men to come, or in holding those who do come to the end of the six weeks' course.

This year the postgraduate teachers have decided, first of all, to shorten the course to four weeks, and then to adopt the system of elective courses, somewhat after the fashion that prevails in the German universities, and also in Harvard and Johns Hopkins. By this plan entire freedom is given to the teachers to offer the course which they think will prove attractive to the postgraduate, and, on the other hand, to the postgraduate to take the course which appeals to him. To judge from the outline of the courses already offered, it appears that the main endeavour of the teachers will tend towards providing a somewhat fuller course in each subject than in any previous year. Thus, the postgraduate who desires to obtain a more thorough teaching in surgery than is usually offered in the ordinary postgraduate school, will find that he can devote from three to four hours a day to this subject alone; likewise in medicine and the specialties. It is expected, also, that the plan of attaching a separate fee to each separate course will give the postgraduate an acceptable choice in the subjects which he may desire to take, and also guarantee to him the best efforts of the teacher. It is understood that both the Royal Victoria and the General Hospital will combine, each taking two weeks of the four weeks' course, thus guaranteeing to the postgraduate the clinical advantages of these two great hospitals, containing as they do, nearly five hundred public beds.

THE third International Congress of Neurology and Psychiatry will be held at Ghent from August 20th to 26th. The secretary is Dr. F. D'Hollander, 110 Boulevard Dolez, Mons, from whom information concerning the congress may be obtained.

THOSE desiring to attend the Conference on the Prevention of Infant Mortality, which is to be held in the Caxton Hall, Westminster, London, on August 4th and 5th, next, may obtain information from Dr. Henry L. Coit, chairman of the American committee, 277 Mount Prospect Avenue, Newark, New Jersey, or from the secretary, Dr. Philip Van Ingen, 125 East Seventy-first Street, New York.

THE fourth International Congress on School Hygiene will be held at Buffalo, New York, from August 25th to 30th, inclusive. The meetings will be held under the patronage of Mr. Woodrow Wilson, President of the United States, and under the presidency of Dr. Charles W. Eliot, president emeritus of Harvard University. The Congress will be the first of its kind to be held in America and no efforts will be spared to make it worthy of the occasion. A comprehensive programme is being arranged to include every aspect of school hygiene, in addition to which there will be scientific and commercial exhibits. Attractive plans have been made also for the entertainment of those who attend the Congress, and these include excursions to Niagara Falls. Membership may be secured on the payment of a five-dollar fee. Applications should be sent to the secretary, Dr. Thomas A. Storey, College of the city of New York, New York.

THE recent outbreak of smallpox at Niagara Falls has led to a singular exposure of civic discord. The facts are astonishing and somewhat amusing. Several cases of the disease appeared in the town; and they were promptly and very properly isolated. The isolation, however, was one in name only, for certain "isolated" persons were seen walking about the streets and conversing with their friends, while others in the hospital were visited by their friends. When the board of health asked the city council to issue an order for compulsory vaccination, it was requested to resign, where-

upon three of the five members availed themselves of this opportunity of lessening their responsibilities. A new medical officer of health, Dr. H. Logan, was appointed immediately, and, in obedience to a command from the provincial board of health, the much contested order for compulsory vaccination was given. From this time, some order seems to have reigned amid the chaos of conflicting opinion, and the usual quarantine measures have been enforced. The result is that the epidemic is practically over and few new cases have occurred.

THE medical profession in Germany is so over crowded that the Prussian Medical Chambers have been requested by the Chamber of Breslau to warn students not to enter the profession. From 1885 to 1910 the population of Germany increased by 34 per cent., while the number of medical men increased by 106 per cent. The workmen's insurance laws make it compulsory for a large percentage of the population to become members of sick clubs, whereby they receive medical attention in case of illness. This, with the increasing number of hospitals, naturally has resulted in a diminishing number of private patients.

IN Bulletin 246 of the Laboratory of the Inland Revenue Department, Mr. McGill, the chief analyst, gives a report on one hundred and forty samples of canned tomatoes purchased throughout the Dominion in September and October of last year. The cans examined were of three sizes,—large medium and small. Twenty ounces of solids was taken as a reasonable content for a thirty-seven ounce tin; and on this basis, it was found that 47 per cent. of the medium cans, and 60 per cent. of the small cans were below the suggested standard. Mr. McGill is of the opinion that a standard should be legalized under the provisions of the Meat and Canned Foods Act.

THE DIAGNOSIS OF SMALLPOX

TO THE EDITOR OF THE CANADIAN MEDICAL ASSOCIATION JOURNAL.

Sir,—In the March issue of the JOURNAL, a communication appears from Dr. H. H. McNally, of Fredericton, on which I desire to make some comments.

In reading this communication it is difficult to understand what Dr. McNally's purpose is. His whole statement appears to be a series of theories advanced by himself in a half-hearted, hesitating way, interspersed with a bewildering variety of queries and questions. His reference to the health officer of New Brunswick quarantining cases as smallpox which had been regarded as chicken-pox by men of much experience in epidemics where the death-rate has been high, simply calls attention to the fact, which experienced public health officials throughout Canada and the United States will corroborate, that it is a difficult matter to convince an old practitioner who has gained his experience from epidemics of the virulent type, that the milder epidemics of late years are in reality the same disease in a highly modified form.

In his further reference to the mild epidemic in central New Brunswick a few years ago of "so-called" smallpox, he calls attention to the fact that vaccination was successful in several cases which had had this disease. In this connexion I would ask Dr. McNally if he can guarantee that chicken-pox was not also existent in the community at the same time. I have frequently noted the fact that the two diseases co-exist at the same time in the community, and that frequently one is mistaken for the other. In the paragraph following, which I quote in full, I think Dr. McNally has given a very accurate description of cases of chicken-pox. The paragraph is as follows:

"In the many cases in the interior epidemic of which reference is made here, there was not one case, of the great number which I saw, in which the vesicles did not appear in crops, extending over many days, and in some cases they were covered from head to foot with vesicles and scabs at the same time, and yet not one vesicle was found to coalesce with another, and even in cases which were hideous to look at, in adults who had never been vaccinated, there was no secondary fever."

In his references to my article which appeared in the December issue, Dr. McNally clearly shows that he did not read this article carefully, or that he intentionally misrepresents me. He states, not seeing any remarks on the death-rate, he has concluded all of my cases recovered irrespective of vaccination. My statement made was surely sufficiently clear on this point; i.e. "Only one of the series related showed very serious symptoms. This man had a profuse eruption on the tongue, roof of mouth, and pharynx, and threatened to die from suffocation." The inference surely is that he did not die, and that therefore the death-rate was nil. In quoting me regarding the infectiousness of the disease, he fails to quote the sentence immediately preceding, without which the quotation might be misunderstood. This sentence is: "The source of infection in the great majority of these cases is known and indicates beyond a doubt that the infection in smallpox, just as in the other exanthemata, is chiefly derived from personal contact with the disease itself, and not communicated by carriers or from infected inanimate objects or things." That the disease may be communicated by fomites I believe quite certain, but personal contact with the disease itself will, I think, be found responsible for the majority of cases in all epidemics, just as was the case in the series of cases I described.

Dr. McNally cites a case of a chicken-pox patient being placed in a smallpox hospital where he contracted smallpox and died, and adds: "yet Dr. Whitelaw tells us it is not a serious thing to mistake grippe or chicken-pox for smallpox." Whether he has fairly quoted me I leave it to your readers to judge. My statement was as follows:

"From the standpoint of a medical officer of health it is not at all a serious matter to mistake chicken-pox for smallpox, as compared with the dire results which may follow to the community at large, from failing to diagnose a genuine case of smallpox and having it removed to a hospital as a case of grippe or typhoid. From the standpoint of the general practitioner, it is perhaps different, however, since he feels his first duty is towards his patient, rather than towards the public."

My remarks were, as will be seen, simply a comparative statement of two possibilities. In the one case, only the patient himself is affected adversely, in the other, a large number of people, if not the whole community. It was certainly a very serious mistake

for the chicken-pox patient referred to by Dr. McNally. Had he been vaccinated on admission, however, as recommended in doubtful cases, he probably would not have contracted smallpox.

In conclusion, I desire to take exception to Dr. McNally's suggestion contained in the question: "What has so changed the smallpox of Canada to such a mild non-contagious disease within the few years which have passed since the fearful Montreal epidemic?" Does Dr. McNally really mean to suggest that the mild type of smallpox now existent is non-contagious? My experience is, that it is now, as it always has been, one of the most highly contagious infections, even when mild in character. Will Dr. McNally kindly tell us where and when the mortality of smallpox epidemics often reached seventy-five per cent.?

T. H. WHITELAW, M.O.H.

Edmonton, Alberta, March 26th, 1913.

ONTARIO HEALTH OFFICERS' ASSOCIATION

THE following is the provisional programme of papers which will be read at the Annual Conference of Medical Officers of Health for Ontario, which will be held at the Parliament Buildings, Toronto, on Thursday and Friday, May 29th and 30th. "The duties of the modern medical officers of health" by Dr. Charles J. Hastings, Toronto, and Dr. George A. Dickinson, Port Hope. *The Exanthemata*—papers by Dr. James Roberts, Hamilton, and Dr. M. B. Whyte, Toronto; "Diagnosis of smallpox," by Dr. R. W. Bell, Toronto. *Tuberculosis*—"Sputum examination in Ontario," by Dr. C. D. Parfitt, Gravenhurst; papers will also be read by Dr. Duncan Graham, Toronto, and by Miss Eunice Dyke, Toronto. *The Milk Question*—"Essentials for the production of a safe milk supply," by Dr. G. C. Nasmith, Toronto; "Importance of milk as a food," by Dr. A. W. Macpherson, Peterborough. *Disposal of waste and garbage*—In cities, by Dr. R. C. Harris, Toronto; In towns, by Dr. W. R. Hall, Chatham. *Disposal of domestic sewage*—In suburban and rural areas, by Dr. Robert E. Wodehouse, Fort William. "The scope of work in home hygiene," by Dr. Charles A. Hodgetts, Ottawa. Paper by Dr. C. N. Laurie, Port Arthur. Paper by Dr. John A. Amyot, Toronto. Presidential address, by Dr. Adam H. Wright, Toronto.

There are about eight hundred and fifty medical officers of health in Ontario and it is expected that the meeting will be well attended. With this in view, arrangements are being made for reduced railway fares.

Book Reviews

THE BACTERIAL DISEASES OF RESPIRATION, AND VACCINES IN THEIR TREATMENT. By R. W. ALLEN, M.D., B.S. (Lond.). Price, 6s. net. London: H. K. Lewis, 1913.

This book bears the affectionate dedication, "To Beatrice, my wife." This practice of writers on medical subjects of bestowing public marks of affection upon their womenkind might well be abandoned. It is with an author's achievements in science, not in domesticity, that a reader is especially concerned. When Dr. Allen first began the study of bacterial diseases of respiration, and vaccines in their treatment, ten years ago, the one thing that struck him beyond all others, was the utter inadequacy of the information obtainable from works in the English language, and, indeed, in any tongue; and he thinks that the omission has not yet been repaired in any single book, or collection of books, to which he has had access; accordingly, it occurred to him that a brief but systematic description would have a certain value and prove of interest to many. Even "granting the truth of this statement" it is still open to question if this remarkable deficiency has now been remedied. Most of the matter contained in the book has already appeared as a series of articles in the *Journal of Vaccine Therapy*, but it has been revised and fresh matter has been included; the most important additions being in the sections devoted to pulmonary tuberculosis. Dr. Allen is a very high authority, and physicians who wish to be well informed will be glad to have the record of his observation and judgement.

SKIN GRAFTING. FOR SURGEONS AND GENERAL PRACTITIONERS. By LEONARD FREEMAN, B.S., M.A., M.D., professor of surgery in the medical department of the University of Colorado. Illustrated; price, \$1.50. St. Louis: C. V. Mosby Company, 1912.

This is one of the most admirable monographs which has come under the notice of the present writer. The author is a master of the art of writing as well as of surgery. The historical account of skin grafting is a complete summary of the method as it grew from ancient to modern times. To the surgeon the book will be

invaluable, and any physician will find in it matter for entertainment and profit. The monograph is not made: it is written.

CHLORIDE OF LIME IN SANITATION. By ALBERT H. HOOKER.
New York: John Wiley & Sons. London: Chapman & Hall, Limited, 1913.

Few persons are aware of the extent to which chloride of lime is used in sanitation and industry, and this book tells all about it. It is of especial importance in Canada, since there are few cities on the St. Lawrence and Ottawa which do not add chloride of lime to the drinking water. The book is important in other ways also, as it deals with many problems in sanitation. The references to the literature and summary of papers is admirable, even Montreal is not neglected. The date given for Scheele's birth is, of course, a misprint. It should be 1742.

THE PRESCRIBER, VOLUME VI., JANUARY TO DECEMBER, 1912.
Edited by THOMAS STEPHENSON, Ph.C., F.R.S.E., F.C.S.
EDINBURGH: The Prescriber Offices, 1912.

One is sure of a pleasant evening over this book. It is really a bound volume of a publication which appears monthly. It contains all that is new in medicine for the year, and is illuminated with much judicious comment. Nothing could be better than the index to current literature. In addition there is every month a page, "By the way," in which one gets a taste of that humour which has its habitat in Edinburgh.

THE BLOOD: A GUIDE TO ITS EXAMINATION AND TO THE DIAGNOSIS AND TREATMENT OF ITS DISEASES. By G. LOVELL GULLAND, M.A., B.Sc., M.D., F.R.C.P.E., AND ALEXANDER GOODALL, M.D., F.R.C.P.E. Illustrated. Toronto: The Macmillan Company of Canada, Limited.

Within the past few years the diseases of the blood and of the blood-forming organs have been a matter of especial concern to clinicians and workers in the laboratory. A concerted effort has been made to discover the pathology of the various conditions, the origin of the various elements in the blood, and their relationship, the one to the other. Monographs and books without number have been published, and the literature has grown to a dimension which few minds can compass. Dr. Gulland and Dr. Goodall have written a fresh book upon the subject; they have been content to

leave at one side for the moment the views of other workers, and have relied for the most part upon their own clinical and pathological experience. The impression made upon the mind of one who reads this book is that the authors have thoroughly explored the field which they have set themselves to describe. Every sentence seems born of experience, and every procedure is described in the light of the difficulties which all accurate observers encounter. The writers are not only workers in a laboratory, they are physicians as well; and their experiments are illuminated by knowledge acquired at the bedside. The book is beautifully written, the material well arranged, nothing omitted, the letter-press and binding all that could be desired. All is done with authority, and every practising physician will be the better for owning a copy.

THE PRACTICE OF OBSTETRICS. DESIGNED FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By J. CLIFTON EDGAR. Fourth edition, revised, with 1316 illustrations; price, \$6.00 net. Philadelphia: P. Blakiston's Son & Company, 1913.

For the fourth time the present reviewer is privileged to comment upon Professor J. Clifton Edgar's "Practice of Obstetrics," this book being the fourth edition. In less than three years eleven thousand copies of the work were demanded by the profession, and up to the present time twenty-two thousand copies have been printed. Before Dr. Edgar set his hand to the writing of the first edition, he had already had fifteen years' experience in maternity hospitals, and in bedside and didactic teaching to his credit. His original aim was to present the subject from a practical and clinical standpoint, and he has still adhered to that intention. In the present edition much new material has been added, notably blood-pressure observations, anæsthesia, vaccine and serum treatment of sepsis, hæmorrhage of the newly born, pelvimetry, premature rupture of the membranes, pubiotomy, extra-peritoneal, Cæsarean section, and the use of the Momburg belt as a device against hæmorrhage. Several of the illustrations have been re-drawn, and fifty-one new ones have been added to the text. Whilst anatomy has not been made a prominent feature of the book, the subjects of pathology and embryology have been adequately dealt with. One who reads the prefaces to the successive editions will find an interesting record of the author's experience, as well as an indication of the progress which has been made in this subject,

which is, perhaps, after all, the most important of those with which the practitioner has to deal. During these years the work has grown in size, so that it now occupies considerably over one thousand large pages, and the illustrations have increased in number to more than thirteen hundred. The book is published in that excellent style which we are accustomed to expect from Messrs. Blakiston's, and further comment is unnecessary upon a work which has met with such enormous success at the hands of the profession.

PRINCIPLES AND PRACTICE OF OBSTETRICS. By JOSEPH B. DE LEE, A.M., M.D. Professor of Obstetrics at the North-western University Medical School. Large octavo of 1060 pages, with 913 illustrations, 150 of them in colours. Cloth, \$8.00 net; half morocco, \$9.50. Philadelphia and London: W. B. Saunders Company, 1913. Canadian agents: The J. F. Hartz Company, Limited, Toronto.

It is quite clear that existing works do not exhaust the subject of obstetrics, since Messrs. Saunders have thought well to put forth this new book. It is a noble volume of ten hundred and sixty pages, each one ten and a half by seven inches in dimension, containing fifty-four lines with about seven hundred words, or about three quarters of a million words in all, that is, as much as half a dozen ordinary text-books. There are nearly a thousand illustrations, of which one hundred and fifty are in colour. The letter-press and paper are of the best, and the text is beautifully displayed. It is, in short, one of the most impressive books on obstetrics which are now in existence.

This treatise, as the author informs us in the preface, is the out-growth of a volume which has been used for fourteen years as a text-book in the North-western University Medical School. For the student, brevity and system are essential, but the practitioner needs a wealth of detail and of illustration, and certainly this is offered to him in the present volume. The descriptions of operations are omitted from the text, and are placed as explanatory legends under the illustrations depicting the successive steps of the procedure, so that the reader may study the pictures serially. The illustrations, for the most part, are original, and were drawn under the supervision of the author by James Kelly Parker, Grace Maidon, and Hermon Becker. The work of these artists has extended over a period of eight years. The material for the illustrations was drawn from the Chicago Lying-In Hospital, and the

microscopic and wet preparations were furnished by Professor Zeit, and Professor Wells, both of them colleagues of the author.

By every test which we have been able to apply, this work, which may well be described as a monumental one, proves itself to be a complete and accurate exponent of the best modern practice of the science and art of obstetrics.

DISEASES OF THE THROAT, NOSE, AND EAR. FOR PRACTITIONERS AND STUDENTS. By W. G. PORTER, M.B., B.Sc., F.R.C.S. (Edin.) Illustrated. Toronto: The Macmillan Company of Canada, Limited, 1912.

This is a workmanlike book, good for the senior student and good for the practitioner. It describes the best practice of the Edinburgh School, and there is none better. The writing is done with restraint, and there is throughout a close adherence to the subject, for which students and practitioners will be grateful. The work is not overburdened with illustrations; but the coloured drawings, of which there are forty-four drawn by Mr. Gamley under Dr. Porter's supervision, are of beauty and use. Pictures of instruments are excluded, since, as the author remarks with nice irony, "an instrument catalogue can generally be consulted."

HYPERTROPHY OF THE PROSTATE. By W. J. MACDONALD, M.D., St. Catharines, Ontario. 142 pages, 5 full-page case plates with descriptive letter-press, price, \$2.00. Toronto: D. T. McAinsh & Co.

Quite apart from all considerations of place, this book is of first rate importance. It is a masterly monograph on a subject with which surgeons and patients are much concerned. Up to ten years ago there was practically no treatment for sufferers from the results of enlarged prostate, and they were obliged to endure as well as they could the miseries of "catheter life." Surgical procedures of various modes and by various routes were undertaken. The obstruction was divided; it was excavated by knife or cautery; its surface was burned; but the result was inevitably the same. The obstruction returned or the patient died of sepsis. In 1901, Freyer, of London, and Proust, of Paris, almost simultaneously devised operations—the one by the supra-pubic, the other by the perineal route—for the total enucleation of the gland. Dr. Macdonald describes all this in an introductory chapter, and he writes with a precision and lucidity which is worthy of high praise.

He does not suffer by comparison with any writer on surgical subjects with whom the present reviewer is acquainted. In these seven chapters with five plates every aspect of the case—*anatomical, operative, and clinical*—is dealt with; and the book gives the impression of being born out of the author's experience. It is entirely creditable to Canadian surgery, but the author has been badly served by the printer. It is nothing short of a disgrace that so excellent a book should have been so wretchedly printed on such cheap and pretentious paper. It is easy to understand why nearly all Canadian writers send their work abroad to be published.

DISEASES OF THE LIVER, GALL-BLADDER AND BILE DUCTS. By HUMPHRY DAVY ROLLESTON, M.A., M.D. (Cantab.), F.R.C.P. Illustrated; price, \$6.50. Toronto: The Macmillan Company of Canada, Limited, 1912.

For the past twenty years the name of Dr. Rolleston has been closely identified with the study of diseases of the liver, gall-bladder, and bile ducts. Indeed it was due largely to his efforts, that diseases of these organs have obtained so generous a recognition, for he has worked unremittingly upon the subject, and has obtained an enormous experience. He is also an accomplished writer, and in his various activities has touched medicine at every point, not only as a practitioner, but as an administrator. In the year 1904, the first edition of this work was issued. It received generous praise, and has been accepted as a standard ever since. In the present case, the work has been revised and much new matter has been added. Alterations have been made, and the text has been condensed when that procedure was found desirable. In the main, however, the book follows the original plan. The anatomy and physiology of the organs concerned has been quite properly left to treatises on those subjects. In the description of each disease full reference is made to the underlying morbid changes, since, as the author declares, without the knowledge of these it is impossible to make a rational diagnosis, to treat the clinical manifestations, or to give a reliable prognosis. The present work will bring no sense of strangeness to those who are familiar with the first edition. To those who are unfamiliar with Dr. Rolleston's work—and they must be few—this book will come as a revelation of the best that is known upon the subject with which it deals. The book is published by the Macmillan Company of Canada, and is admirably printed by the Clarks of Edinburgh.

Books Received

THE following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

MINOR MALADIES AND THEIR TREATMENT. By LEONARD WILLIAMS, M.D., M.R.C.P. Third edition; price, 5s. net. London: Baillière, Tindall & Cox, 1913.

SURGERY, ITS PRINCIPLES AND PRACTICE. By Various Authors, edited by WILLIAM JAMES KEEN, M.D., LL.D. Volume VI. Illustrated. Price per volume, cloth, \$7.00 net; half morocco, \$8.00 net. Philadelphia and London: W. B. Saunders Company. Canadian agents: The J. F. Hartz Company, Toronto, 1913.

THE DEVELOPMENT OF THE HUMAN BODY. A MANUAL OF HUMAN EMBRYOLOGY. By J. PLAYFAIR McMURRICH, A.M., Ph.D., LL.D. Fourth edition, revised and enlarged; price, \$2.50 net. Illustrated. Philadelphia: P. Blakiston's Son & Company, 1913.

PRISMS. THEIR USE AND EQUIVALENTS. By JAMES THORINGTON, A.M., M.D. Illustrated. Philadelphia: P. Blakiston's Son & Company, 1913.

SOLIDIFIED CARBON-DIOXIDE IN THE SUCCESSFUL TREATMENT OF CUTANEOUS NEOPLASMS AND OTHER SKIN DISEASES, WITH SPECIAL REFERENCE TO ANGIOMA, EPITHELIOMA AND LUPUS ERYTHEMATOSUS. By RALPH BERNSTEIN, M.D. Illustrated. Philadelphia: Frank S. Betz Company, 1912.

GENERAL PARESIS. By PROFESSOR EMIL KRAEPELIN, Munich. Translated by J. W. MOORE, M.D. Nervous and Mental Disease Monograph Series, No. 14. New York: The Journal of Nervous and Mental Disease Publishing Company, 1913.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE, Vol. VI, No. 4, February, 1913. Price, 7s. 6d. net. London, New York, Calcutta, and Bombay: Longmans, Green & Company.

LECTURES ON DISEASES OF CHILDREN. By ROBERT HUTCHISON, M.D., F.R.C.P. Third edition. London: Edward Arnold. Toronto: The Macmillan Company of Canada, Limited, 1913.

CLINICAL DISORDERS OF THE HEART BEAT. A HANDBOOK FOR PRACTITIONERS AND STUDENTS. By THOMAS LEWIS, M.D., D.Sc., M.R.C.P. Toronto: The Macmillan Company of Canada, Limited, 1913.

BISULPHATE OF QUININ IN THE TREATMENT OF ACUTE AND SUB-ACUTE GONORRHEAL URETHRITIS. By ALBERT E. MOWRY, M.D. Reprinted from the *Illinois Medical Journal*, August, 1911.

TUBERCULIN IN DIAGNOSIS AND TREATMENT. By F. M. POTTENGER, M.D., LL.D. Illustrated; price, \$3.00. St. Louis: C. V. Mosby Company, 1913.

A TEXT-BOOK OF PHYSIOLOGY. By ISAAC OTT, M.D. Fourth edition, revised and enlarged; illustrated. Price, \$3.50. Philadelphia: F. A. Davis Company, 1913.

NERVOUS AND MENTAL DISEASES. FOR STUDENTS AND PRACTITIONERS. By CHARLES S. POTTS, M.D. Third edition, enlarged and revised. 12mo. volume of 610 pages, with 141 engravings and 6 full-page plates. Price, cloth, \$2.75 net. Philadelphia and New York: Lea & Febiger, 1913.

THE addition to the Berlin-Waterloo Hospital was formally opened on Saturday, April 5th. The hospital was first opened in 1893, and since then, of course, the need for accommodation has increased. During the month of February, forty-five patients were admitted and thirty-nine were discharged. The number of hospital days was seven hundred and forty-four.

Men and Books

BY SIR WILLIAM OSLER, M.D., F.R.S.

XXI. ARISTOTLE.—GREEK THINKERS BY GOMPERZ, Vol. IV. Readers of my occasional addresses will have noted frequent references to the work of Professor Gomperz on "Greek Thinkers," Volume IV of which has just appeared. To young men with leisure, young practitioners in the waiting stage, who wish to keep the dough of their minds leavened, let me commend these volumes. An hour a day, or less, for a year, with a note book, and I can promise the best of company and a stimulating diet, full of intellectual hormones. If it be true that a man is born a Platonist or an Aristotelian, my congenital bias was towards the great idealist, but without, I fear, the proper mental equipment; the cares of this world and the deceitfulness of my studies have driven me into the camp of the Stagirite. And it is a glorious tribe, to be sealed of which, even as a humblest member, one should be proud. In the first circle of the Inferno Virgil leads Dante into a wonderful company, the philosophic family who look with reverence on "The Master of those who know"—and so with justice has Aristotle been regarded for these twenty-three centuries*. No man has ever swayed such an intellectual empire—in logic, metaphysics, rhetoric, psychology, ethics, poetry, politics and natural history, in all a creator and in all still a master. The history of the human mind offers no parallel to the career of the great Stagirite.

It is as a biologist that Aristotle has a special interest for us. Professor D'Arcy Thompson, who dealt recently with this side of his activities, thus sums up his attitude as a student of life:

"But he was, and is, a very great naturalist. When he treats of natural history, his language is our language, and his methods and problems are well nigh identical with our own. He had familiar knowledge of a thousand varied forms of life, of bird and beast, of plant and creeping thing. He was careful to note their least details of outward structure, and curious to probe by dissection into their parts within. He studied the metamorphoses of gnat

*"The good collector of the qualities," Dioscorides, Hippocrates, Avicenna, and Galen were the medical members of the group.

and butterfly, and opened the bird's egg to find the mystery of incipient life in the embryo chick. He recognized great problems of biology that are still ours to-day, problems of heredity, of sex, of nutrition and growth, of adaptation, of the struggle for existence, of the orderly sequence of Nature's plan. Above all, he was a student of Life itself. If he was a learned anatomist, a great student of the dead, still more was he a lover of the living. Evermore his world is in movement. The seed is growing, the heart beating, the frame breathing. The ways and habits of living things must be known: how they work and play, love and hate, feed and procreate, rear and tend their young; whether they dwell solitary, or in more and more organized companies and societies. All such things appeal to his imagination and his diligence. Even his anatomy becomes at once an '*anatomia animata*,' as Haller, poet and physiologist, described the science to which he gave the name of '*physiology*.'"^{*}

Before Aristotle there were other great students of nature among the Greeks, but he first taught men to look upon nature's naked loveliness—to use Shelley's phrase. The noble character of the man as a devoted husband and father, and as a master, are illustrated in his will, of which Gomperz gives an analysis. But the biologist did not escape altogether from the idealism of his great master, Plato. On the grave of his first wife he offered sacrifices as to a heroine, and a votive offering was to be presented in gratitude for the escape from danger of Nicanor, his son-in-law, who was to be "father and brother in one" to his younger children.

The son of a physician, Aristotle saw, as no one had seen before, the value of science in medicine. The following sentences, with which the "*De Respiratione*" concludes, might have been written to-day: "But health and disease also claim the attention of the scientist, and not merely of the physician, in so far as an account of their causes is concerned. The extent to which these two differ and investigate diverse provinces must not escape us, since facts show that their inquiries are, to a certain extent, at least conterminous. For physicians of culture and refinement make some mention of natural science, and claim to derive their principles from it, while the most accomplished investigators into nature generally push their studies so far as to conclude with an account of medical principles."[†]

^{*}"On Aristotle as a Biologist," by D'Arcy W. Thompson, Oxford, February 14th, 1913, p. 14.

[†]"The Works of Aristotle" translated, by J. A. Smith and W. D. Ross. Part I. "*Parva Naturalia*." P. 480 b., Oxford, 1908.

Retrospect of Surgery

POSTOPERATIVE THROMBOPHLEBITIS. By A. C. BURNHAM, *Annals of Surgery*, February, 1913.

IN the hope of helping to elucidate some of the problems associated with thrombophlebitis, which in spite of advances in post-operative treatment, still remains common, Burnham reviews somewhat in detail ninety-eight cases of thrombophlebitis from the records of the Presbyterian Hospital.

In distinguishing thrombosis from coagulation, the theory now generally accepted is that the blood platelets play a prominent part in the former and but little or no part in the latter, and, further, that fibrin and its progeners, although active in coagulation, play only a minor part in the formation of a thrombus. Blood platelets collect about a foreign body or, in consequence of a slowing of the blood stream, upon the damaged wall of a vessel, adhering to the vessel wall and to each other. This process is called *conglutination* and takes place only in the circulating blood. As Baumgarten has shown, there is no thrombus formation in a doubly ligatured excised vein. Following the formation of these nuclei or platelets, there is a rapid accumulation of leucocytes, mostly polynuclears, and following this, and possibly consequent to it, an accumulation of fibrin mixed with red cells. While some observers still adhere to the original coagulation theory of Virchow, Burnham has convinced himself through repeated determinations that there is no decrease in the coagulation time of the general blood in cases of postoperative thrombophlebitis.

According to Aschoff, a change in the character of the blood is a necessity for thrombus formation, while the location of the thrombus is determined by a slowing of the blood stream or by a widening of the vein with the resulting eddy formation. To this may be added injury or disease of the vessel wall. Recently the viscosity of the blood has been suggested as a cause of the slowing of the blood and consequent thrombus formation. Burnham is unable to find any records of viscosity tests in postoperative cases, although Bachman has shown that it is increased in infectious diseases, especially typhoid. It has, further, been definitely proved that in those diseases in which the blood platelets are increased, thrombosis is common. It is possible that in the future the determination of the coagulation time, the viscosity, and the blood platelets, if

made in each case of thrombosis, may lead to important facts regarding this condition.

That chemical changes may influence the formation of thrombi has been abundantly proved. On the one hand, Sahli and Egnet showed that thrombi did not form after the blood had been rendered non-coagulable by the injection of leeches extract, while, on the other, Schimmelbusch was able to cause the formation of experimental thrombi after destruction of the coagulation of the blood by the injection of peptone.

Given the predisposing causes in the blood, what is necessary for the formation of a thrombus? The commonly accepted causes are, (1) a slowing of the blood stream with or without the formation of eddies, and (2) localized injury or disease of the vessel wall. Local causes of slowing of the blood stream are seen in the anatomical relation of the left iliac vein and the artery, and in the pressure on the veins, especially those of the pelvis, by new growths, gravid uterus, tight clothing, etc. These causes, together with the varicosities so common on the lower extremities, without doubt account for the predilection of the lower extremities, especially the left, to thrombophlebitis. Of the ninety-eight cases reviewed, the condition occurred ninety-four times in the lower extremities, and in eighty-one of the ninety-four cases in the left leg. That these mechanical causes cannot of themselves cause thrombus formation is clearly evident, but that they do act as exciting causes in many cases is a well recognized clinical fact. Changes in the vessel wall may cause phlebitis. Injury to the vein without other known cause has been found to excite thrombus formation. Primary inflammation or infection spreading from contiguous tissues may excite a typical thrombophlebitis. If degenerative changes in the veins were the chief predisposing cause, this disease would be much more common in patients past middle life, whereas in the present series 50 per cent. were under forty years of age and 20 per cent. were not over twenty years old.

It is difficult to study a large number of cases of postoperative thrombophlebitis without concluding that the greater part, if not all, of the cases, are infectious manifestations. Heidemann calls attention to the incubation period and holds the entire process to be of an infectious character. Klein points to the afebrile cases as an argument against infection, but, as pointed out by Fromme, many slight rises of temperature may be overlooked and, moreover, infection may occur without febrile reaction. In the present series 13.5 per cent. were clinically afebrile. These were generally the milder cases, the average time of confinement in bed being

fifteen days. Lubarsch examined two hundred and fifteen cases and in spite of the most exact technique could demonstrate organisms in only twenty cases. From this fact and from the fact that thrombophlebitis occurs by preference in the veins of the lower extremities, Klein argues against the infectious theory of the disease, an attitude which in Burnham's opinion is as futile as the argument that rheumatism and tuberculosis are non-infectious because no microorganisms can be demonstrated in the former and because the latter occurs by preference in the apices of the lungs. In Burnham's opinion, the course and symptoms of the disease are too typical of infection to permit of any other conclusion than that the disease is infectious. Where blood counts were made in the series reported, a mild infection was always indicated. In thirty counts on twenty-four patients, the average leucocytosis was 14,700 and the average polymorphonuclear count 87 per cent.

The ninety-eight cases occurred in a total of 11,655 operations. In ninety-four cases, thrombosis occurred in one or both legs. In five of these cases records are incomplete, so that eighty-nine cases only are analyzed.

The incidence of the disease in 11,655 operations was 81 per cent. Special percentages are given in the following table:

Operation	Total Number	Phlebitis			Per cent.
		Males	Females	Total	
Appendectomy.....	2,670	13	28	41	1.5
Inguinal hernia.....	1,008	8	1	9	0.9
Operations on tubes.....	676	..	9	9	1.3
Ventro-suspension.....	411	..	3	3	0.7
Hysterectomy.....	293	..	12	12	4.1
Operations on ovaries alone..	202	..	3	3	1.5
Ventral hernia.....	165	..	3	3	1.8
Femoral hernia.....	103
Miscellaneous.....	6,127	6	8	14	0.23

Hysterectomy was most often complicated by phlebitis, with ventral hernia, appendectomy and operations upon the uterine appendages next, in the order named. In all of the twelve cases following hysterectomy, the operation was performed for fibroids—twelve in two hundred and twelve operations, a percentage of over 5 per cent. In eighty-one hysterectomies performed for other causes—carcinoma, prolapse, etc., no cases of thrombosis occurred.

If infections with ordinary pus-forming organisms were held accountable for phlebitis, we should expect to meet with the complication following operations upon purulent foci, and rarely, if ever, after so-called clean operations. Of 94 cases, 32 had a purulent discharge; 10 were granulating; 52 healed by primary union.

Of the same cases, 40 were drained and 54 sutured without drainage. A study of the postoperative temperature records shows that postoperative temperature had little or nothing to do with the onset and course of the phlebitis. Burnham further shows that in cases where drainage was established, the onset of phlebitis was from two to four days later than in those without drainage, and that the cases in which drainage was employed were generally milder and ran a shorter course. This would lead to the hypothesis that the absorption of exudate from the wound predisposes to postoperative thrombophlebitis; in other words, that the absorption of broken down cellular elements and serous exudate, with or without bacteria, causes such a change in the blood as to lead to phlebitis and thrombosis. This hypothesis is in accord with many of the known facts and warrants further study.

Long confinement to bed has recently been suggested as a cause of postoperative thrombophlebitis. In this series, seventy cases began while the patient was still in bed and nineteen after the patient had been allowed to walk around, and, as a matter of fact, the records would seem to indicate that the dependent position of the limbs is a factor in the causation of the process.

ONSET. Average for all cases 12.2 days; average for drainage cases, 13.6 days; average for clean cases, 11.0 days.

Of the 89 cases studied, 12 were afebrile, and 77 ran a febrile course.

Of the eighty-nine cases, three died—one from pneumonia (possibly embolic), one from cerebral embolism, and one from gastric hæmorrhage on the tenth day following gastro-enterostomy and two days after the onset of phlebitis.

TREATMENT. Absolute rest in bed with ice cap and elevation of the leg was the routine method of treatment employed. In other cases ichthyol, menthol, or aluminum acetate dressings were employed. Lemon juice internally may be administered.

Burnham concludes: (1) that postoperative thrombophlebitis is an infectious disease, a definite entity in some way connected with the absorption of material from the wound; (2) that it is preceded by a slowing of the blood stream and by local and general disease of the vessel walls; (3) that it occurs at an earlier date in "clean" cases than in drainage cases; (4) that rest in bed seems to be the only therapeutic measure capable of exerting any marked influence on the severity and course of the disease; (5) that ichthyol seems to have a direct and constant influence on the local pain; (6) that internal medication deserves a more thorough trial than it has had previously.

Res Judicatæ

THE EARLIEST RECOGNITION OF APPENDICITIS

THE question of priority in describing or discovering anything is always of historical interest. In the case of the recognition of inflammation of the vermiform appendix, it would seem, from the writings of various authorities, that there was no doubt as to priority. All authors are of one voice in crediting the first record of such a case to Mestivier, who, in 1759, reported as follows: (I quote from Kelly and Hurdon). "A man of forty-five sought relief for a tumour in the umbilical region on the right side: fluctuation existed and about a pint of pus was evacuated by incision: the wound healed rapidly but the patient died shortly afterwards. The account of the autopsy is that 'the cæcum presented nothing extraordinary: it was covered with gangrenous patches. It was not the same with the vermiform appendix. I had scarcely opened it when we found a large pin, very rusty and so corroded that the least touch would have broken it, a condition which proceeded, no doubt, not only from moisture, but from the acid nature of the material enclosed in the vermiform appendix. After what I have just said, it is easy to understand (although the patient had never spoken of swallowing a pin) that the one under discussion had been concealed for a long time in the vermiform appendix of the cæcum and that it was undoubtedly this which had irritated the different coats of which the organ is composed, and had given rise to all the symptoms, finally causing the death which occurred.'" Edebohl states that Mestivier's case is the first on record, but writes that it occurred in a woman eight months pregnant, but Kelly and Hurdon state that they have verified the above facts.

But a far more typical case of appendicitis, in that it was not caused by a foreign body, stands on record in an old tome that I have recently come across, and which tome will, at the owner's request, be placed in the library of the Academy of Medicine, Toronto. It is a translation by a Dr. Daniel Cox, of London, under the date of 1755, and the book is entitled "Heister's Cases in Surgery." The work consists of a number—six hundred and twenty-four in all—of observations, and is a mine of interesting case records which reflect the curious beliefs and treatments of the day. In the

preface to the translation, Daniel Cox says that "the practice of the writer is not servilely tied down by the rules of others, but is chiefly the result of his own observations, unbiassed by popular modes and unrestrained by popular prejudices." Laurentius Heister practised in Altdorff, and was, according to Daniel Cox's preface, the introducer into Germany of the cooling method of the treatment of fevers, the use of Peruvian bark and of mercury, all of which innovations were at first much opposed by the physicians of the country. The translator likens him to "our illustrious countryman Sydenham" in the way that he fought against "the prepossessions which the philosophical systems of his days, founded on *a priori* reasonings and metaphysical subtleties, had rendered almost sacred." The quotation which we would here give is as follows:

"OBSERVATION CX. *Of an abscess in the vermiform process of the cæcum.* In the month of November, 1711, as I was dissecting the body of a malefactor in the public theatre at Altdorff, I found the small guts very red and inflamed in several places, insomuch that the smallest vessels were as beautifully filled with blood, as if they had been injected with red wax, in the most skilful manner, after Ruysch's method. But, when I was about to demonstrate the situation of the great guts, I found the vermiform process of the cæcum preternaturally black, adhering closer to the peritoneum than usual. As I now was about to separate it, by gently pulling it asunder, the membranes of this process broke, notwithstanding the body was quite fresh, and discharged two or three spoonfuls of matter. This instance may stand as a proof of the possibility of inflammations arising, and abscesses forming, in the appendicula as well as in other parts of the body, which I have not observed to be much noticed by other writers; and when, in practice, we meet with a burning and pain where this part is situated, we ought to give attention to it. It is probable that this person might have had some pain in this part, but of this I could get no information. In such cases I look upon clysters prepared with emollient and discutient herbs, such as mallows, marsh-mallows, and camomile flowers, and the like remedies against inflammations, boiled in milk, and used frequently, to be of excellent use; as they reach the part, and may resolve the inflammation, or bring the abscess to a suppuration, partly by their warmth, partly by their resolving and discutient qualities, opening the abscess, that the matter may be discharged by stool, and the patient may hereby be saved, which, when the parts in the abdomen become corroded, can scarcely happen, but death must follow."

Here we have a clear description of a gangrenous appendix, containing pus, and surrounded by a localized peritonitis with some adhesions; and it will, I think, be admitted that the word-picture might have been drawn to-day. Very likely, further historical research may produce a still earlier record of the recognition of inflammation of the vermiform appendix as a frequent source of peritonitis, but for the present this one of the learned Heister must stand as the first clear description that we have.

Toronto.

R. D. RUDOLF.

Obituary

DR. W. O. EASTWOOD, of Whitby, Ont., died March 22nd, after a brief illness. For the past thirty years, Dr. Eastwood had practised at Whitby. He was coroner for that district and was well-known and highly esteemed. He leaves a widow, one son—Dr. Eastwood, of Peterborough, and one daughter.

DR. ROBERT LAWRENCE, of Vancouver, died of paralysis, March 19th, in the seventy-first year of his age. Dr. Lawrence was born near Springfield, Ont., but the greater part of his childhood and early youth was spent at the "Old Lawrence Homestead" near Collingwood. In 1871 he obtained his M.D. degree and began his professional work at Mono Mills. He afterwards went to Hontywood, where he spent many years, until in 1894 he was elected medical officer to the Dunsmuir mines at Cumberland. Four years later Dr. Lawrence went to Vancouver. Here he enjoyed a large and lucrative practice and made many friends. He was a Mason, an Orangeman, an Anglican, and a Conservative—an indefatigable worker and a popular physician.

DR. LORNE CAMPBELL, son of the late Dr. G. W. Campbell, of Montreal, died at Peaton, Scotland, March 26th, in the fifty-eighth year of his age. Dr. Campbell was born in Montreal, and took his M.D. degree at McGill University in 1882. He then took post-graduate work in Edinburgh and Vienna, and returned to Montreal to practise. Six years ago he went to Scotland to reside. Dr. Campbell was a well-known athlete and his death is much regretted. He leaves a widow and three children.

DR. RANKINE DAWSON, third son of the late Sir William Dawson, died in London on April 1st. Dr. Dawson was born in Montreal in 1858. He graduated from McGill University as B.A. in 1878, and as M.D. in 1882. For many years he was surgeon on one of the P. & O. steamers and, in this capacity, took voyages to China, Australia, and South America. Dr. Dawson is survived by his mother, Lady Dawson, one brother, and one sister.

DR. GEORGE MARTIN, of Montreal, died from diphtheria, April 1st, in the thirtieth year of his age. He was a graduate of Laval University and was connected with the Bruchesi Institute.

DR. ROCH MOISE SAMUEL MIGNAULT, of Yamaska, Que., died March 30th, in the seventy-seventh year of his age. Dr. Mignault was a keen politician and was the Liberal member for Yamaska for a number of years.

DR. JAMES WALLACE, of Alma, Ontario, died April 11th, in the seventy-ninth year of his age. He was a well-known figure in the village of Alma, where he had practised for over thirty years, and his death is much regretted. He leaves a son and a daughter.

DR. ANGUS J. MURRAY, of Fredericton, died of pulmonary tuberculosis on April 3rd. Born at Loganville, Pictou county, in 1855, Dr. Murray was educated at the Pictou Academy and the Provincial Normal School. After a few years spent in the teaching profession, he took up medicine at the Halifax Medical College. In 1884 his health began to fail and he went west. The following year he again took up his studies at what is now known as the medical department of the university of Illinois, where he succeeded in obtaining his M.D. degree. For the next five years he practised at Greenwich, King's county. In 1890, Dr. Murray went to Fredericton Junction, Sunbury, and here he spent twenty-one years in the faithful fulfilment of his professional duties. In 1909, he was elected president of the New Brunswick Medical Society; he was the first country physician to attain to this distinction. He was a member of the provincial board of health and of the municipal council, and for two years was warden of the county. In politics he was a Conservative. Dr. Murray was twice married and is survived by his mother, his widow, two sons, and two daughters.

News

MARITIME PROVINCES

THE Hon. Charles Dalton has promised to give \$20,000 to build a sanatorium in Prince Edward Island for the treatment of tuberculosis, and to give \$1,000 a year for ten years to assist in the maintenance of the institution. The sanatorium is to be denominational and, while those able to pay will be expected to do so, the poor are to receive free treatment. The construction and future direction of the institution is to be undertaken by the Medical Society of Prince Edward Island.

MRS. JORDAN, widow of James C. Jordan, of Boston, has presented to the government of New Brunswick a beautiful country residence, situated twenty miles from Moncton. The house is to be converted into a sanatorium for tuberculous patients in the incipient stage of the disease. The property consists of about eight hundred acres. A commission has been appointed to direct the hospital.

AT a recent meeting of the Fredericton Board of Health, a resolution was passed bringing to the attention of the city council the urgent need for an isolation hospital. The old isolation hospital was taken over by the city council some time ago in connexion with the Chesnut Canoe Factory and, as yet, no steps have been taken to replace it by a more modern institution.

SEVERAL cases of typhoid fever have been reported from New Waterford. An emergency hospital has been opened and the feasibility of erecting a permanent hospital is under consideration. At present, the nearest hospital is the St. Joseph's Hospital at Glace Bay.

THE Halifax Hospital for Women, which has been instituted by Dr. E. K. Maclellan, was opened March 20th. It is the first of its kind in Nova Scotia and supplies a need which for long has been felt. No patients suffering from tubercular or infectious disease of any kind will be admitted, but medical, surgical and maternity cases will be treated. The hospital contains six bedrooms but, if necessary, it can easily be enlarged.

IN the twenty-second annual report of the Hotel Dieu St. Joseph at Campbelltown, N.B., is given the following information: 119 men, 95 women, and 25 children were admitted to the hospital during 1912; of these 205 were discharged cured, 13 improved, and 10 unimproved; 11 deaths occurred. The causes of death are stated to have been typhoid fever, sarcoma of left kidney, heart disease, crushed skull, and gangrened foot. On December 31st, 1912, there were fourteen patients in the hospital. The number of hospital days during the past year were two thousand six hundred and sixty-eight.

ONTARIO

SEVERAL cases of smallpox have occurred at St. Thomas.

THE hospital erected by the National Sanitarium Association at Weston will be opened early in June. It is to be called the "Queen Mary Hospital."

IT has been found necessary to close the hospital at Thessalon for a short time until some better arrangement can be made to meet the expenses of administration.

THE Wingham General Hospital is to be enlarged. It was opened six years ago and since then seven hundred patients have been admitted for treatment. The proposed addition will cost about five thousand dollars.

AMONG other gifts recently made to the Woodstock Fisher Memorial Hospital is an x-ray apparatus, which cost about seven-hundred dollars.

SMALLPOX is reported from Ojibwa near Sandwich. Seventeen persons are suffering from the disease.

THE West Elgin Medical Society met in Rodney, March 12th. Dr. Dorland reported several cases of subphrenic abscess.

DR. THOMPSON, of Mapleton, has been appointed house surgeon of St. Joseph's Hospital.

SIXTY-NINE patients were treated and thirty-nine operations were performed in the Kincardine General Hospital during the period from January, 1912, to March, 1913.

THE agricultural building on the Stamford Fair grounds at Niagara Falls has been converted into a smallpox hospital.

THERE is quite an epidemic of smallpox at Earleton. A child, coming to the public school from an outlying farm, was the first sufferer. Unfortunately, the fact that the child had smallpox was not observed until the case was well-advanced and until several other children and the teacher had contracted the disease. The school has been closed and a rigid quarantine instituted by Dr. George, provincial medical officer of health. Twenty cases have already developed, but as every precaution, including vaccination, has been taken to prevent infection, it is hoped that few additional cases may develop.

DR. GREER has been appointed medical officer of health for North Monaghan. The remuneration is to be \$100 a year.

THIRTY-EIGHT nurses are now engaged in medical inspection work in the schools of Toronto.

THIRTY-EIGHT patients were admitted to the Amasa Wood Hospital at St. Thomas during February, and there were six births and two deaths. On March 7th, seventy-one patients were in the hospital.

ACCORDING to the daily press, in future the charges made by the medical profession in Hamilton will be: "advice over telephone \$1; advice without medicine \$1 to \$3; full and exhaustive advice \$2 to \$5; regular morning visits \$2 to \$5; call in afternoon when notice has not been given in the morning fifty cents extra; maternity cases from fifteen to fifty dollars."

ONE hundred and twenty-four infants of under one year of age died in Toronto during the month of February.

A GRANT of eighty-seven thousand dollars has been made by the provincial government to the hospital for the feeble-minded at Orillia. Sixty thousand dollars of this is to be devoted to the extension of the hospital. It is probable that one cottage, and perhaps two, will be added this year.

A NEW smallpox hospital is to be built at Brantford.

THE extension which is being added to the St. Joseph's Hospital at Chatham will be completed about the end of June.

AN extension is to be added to the north side of the Strathroy Hospital. This, with other proposed changes, will cost about six thousand dollars.

THE annual meeting of the London Health Association was held April 2nd. On this occasion, it was resolved that, in future, the annual meeting should be held on the second Wednesday in October, instead of on the first Wednesday in April, and that the fiscal year of the Association should be changed from the 31st day of December to the 30th day of September in each year. It was resolved, also, that application be made to the lieutenant-governor-in-council to amend the charter of incorporation to permit cities of 15,000 population, or over, to appoint not more than two representatives to the board of directors, one of such representatives to be the mayor of the city in question.

DURING the months of February and March, there were in Berlin eight cases of smallpox, two of scarlet fever, and nine of diphtheria, four of which resulted fatally.

QUEBEC

THE first annual meeting of the District of Bedford General Hospital at Sweetsburg was held on March 25th last. The first patient was admitted on March 9th, 1912, and during the year seventy-three patients have been treated, including twenty-four surgical cases. The daily cost of maintenance for each patient has been \$1.90. The death rate was 1.33 per cent.

THE appeal for funds to establish a tuberculosis hospital at Quebec has brought forth a ready response. The amount required before the building can be commenced is one hundred thousand dollars; of this, fifty thousand dollars has been subscribed.

THE Sixth Congress of the "Médecins de la langue française de l'Amérique du Nord," will take place at Quebec in 1914, and not at Montreal during the present year.

THE following statistics are given in the report for 1912 of the Montreal Board of Health. Of 658 pupils examined for de-

fective sight, only 106 were without visual defect. Of 207,431 pupils examined, 67,608 were suffering from illness or defects of some nature. A large proportion—42,211—had defective teeth, and 5,475 were suffering from skin affections; 6,141 cases of contagious disease were reported in the city, 1,710 being children of from five to ten years of age. The cases included: scarlet fever, 1,305; tuberculosis, 1,384; typhoid, 417; smallpox, 194; and chicken-pox, 957.

THE annual meeting of the American Gynæcological Club was held in Montreal, February 21st and 22nd. About thirty-five members of the club visited Montreal.

DR. J. E. LABERGE is acting as medical officer of health for Montreal in the absence of Dr. L. Laberge, who was recently thrown from a sleigh and severely injured.

MANITOBA

THE question of building a hospital at Souris is under consideration.

BRANDON is greatly in need of more hospital accommodation. Every department of the present building is over-crowded. It has been suggested that a separate maternity hospital be erected and that a new general hospital be built on the unit plan, as is being done in Saskatoon. At a meeting of the building committee which took place March 25th, a resolution was passed to the effect that a maternity hospital be built with accommodation for from twenty-five to thirty patients, that the surgical building be extended, the old building remodelled, and the nurses' home enlarged. Some of the members present at the meeting considered that it would be unwise, at the moment, to expend the money necessary to build a new hospital.

THE medical inspection of children in the public schools was discussed at a recent meeting of the school trustees at Portage La Prairie. It was decided that information should be obtained concerning the cost of such a proceeding and that, if found practicable, such inspection should be made in the future.

DR. G. W. SINCLAIR, of Vancouver, has been appointed superintendent of the Winnipeg General Hospital.

THE annual meeting of the Winnipeg General Hospital took place March 31st. During the past year 5,599 patients were treated, and the number of hospital days was 94,925. These figures are somewhat less than those for 1911; but the explanation for this is that during the alterations which have been made to the building the accommodation for private patients has been decreased. This explains also, to some extent, the deficit of \$37,185, shown by the treasurer's statement. The death rate during the year was 6.84. The new wings will be completed probably next June, and when these are in use the capacity of the hospital, which now can accommodate 245 patients, will be almost doubled, and the facilities for the treatment of out-patients will be greatly increased. The cost of the new buildings has been \$650,000. The Winnipeg General Hospital was organized in 1872 and incorporated provincially in May, 1874. After many vicissitudes and many temporary resting places, the hospital first occupied its present site in 1884, when the original building was erected at a cost of \$65,000.

SASKATCHEWAN

THE Swift Current Hospital was opened a year ago. During the year, 504 patients have been treated, 250 being surgical cases.

THE new hospital at Saskatoon will be built on the university grounds. This year, it is proposed to build one unit which will accommodate two hundred and ten patients, and a contagious diseases hospital with accommodation for fifty patients. Later, perhaps in two years' time, the hospital will be extended. Ultimately, it is the intention so to enlarge the hospital that there will be room for from eight hundred to one thousand patients. With the room provided by extensions and shacks, the present hospital can accommodate one hundred and thirty patients, and during the past year over one thousand six hundred patients were treated.

A SERIOUS outbreak of smallpox is reported from Lac La Plonge. The disease has broken out in a school in which there are about eighty Indian pupils.

Two cases of smallpox recently occurred in Prince Albert and as there is no smallpox hospital there, it was difficult to know where to send the patients. It was decided that they should be sent to the isolation hospital, where several cases of scarlet fever were under

treatment. This action has been criticized by some members of the hospital board, as on June 12th, 1912, the city was notified that from that date onwards no cases of smallpox could be admitted to the isolation hospital. The fault would appear to lie with the civic authorities, who as yet have failed to make any provision for cases of smallpox which may occur in the city.

MEASLES is very prevalent in the town of Elbow; and from Leney, a town forty miles west of Saskatoon, come reports of a smallpox epidemic. The usual quarantine has been instituted.

ALBERTA

A CIVIC organization has been formed in Calgary, and has been given the name of the Calgary Forum. It is non-sectarian and its meetings are to be held on Sunday afternoons. The purpose of the association is to create a wider interest in questions concerning public welfare, and such subjects as "Prison Reform," "Civic Health," "Child Protection," "The Hospital Question," will be discussed. It is the intention also, before a by-law is submitted and voted upon, to discuss it fully and from every possible standpoint, so that the citizens may be well informed on the matter before making their decision and giving their vote.

It is probable that cottages will be built at Medicine Hat, to be used as extension wards to the isolation hospital in case of necessity.

DR. P. F. SMITH has been appointed medical inspector of schools at Camrose.

THE Camrose Hospital Board recently passed a resolution to the effect that in future, on admission to the hospital, patients must pay in advance one week's fees, the remainder of the amount due to be paid before they leave the hospital. The charge made for a private ward is \$2.00 a day, and for the public wards \$1.50 a day.

AT a recent meeting of the Edmonton Medical Association, a resolution was passed requesting that medical men be no longer debarred from acting on the hospital board and that provision be made for medical representatives on that board, such representatives to be nominated by the Edmonton Medical Council. The

matter has been referred for consideration to a committee consisting of three aldermen, the chairman of the hospital board, and a representative of the Medical Association.

A GRANT of \$4,000 has been made by the provincial government to assist two young physicians willing to practise among the settlers in the far north of Alberta. A voluntary hospital has been opened at Lac Ste. Anne. It has been found that here in fifty per cent. of the serious accidents that occur, the patient dies because it is impossible to obtain medical assistance.

THE twelfth annual meeting of the Memorial Hospital Board, at Red Deer, took place on Friday, March 14th. The hospital was enlarged last year at a cost of over fifteen thousand dollars, and now affords accommodation for sixty patients. This year, a nurses' home is to be built. A training school for nurses has been organized and at present there are four probationers training in the hospital. Three hundred and forty patients were treated in 1912, the daily cost of maintenance for each person being \$1.49; the increased cost of living, however, has brought this rate up to \$1.58 this year. The hospital receives the usual provincial grant of twenty-five cents a day for each patient, and last year eight hundred dollars were granted by the town council: otherwise, the hospital is largely dependent upon voluntary subscriptions.

OVER twenty-three thousand dollars have been subscribed for the General Hospital which is to be built at Walkerville. The site was given by a local firm.

BRITISH COLUMBIA

AN application has been made to the provincial government by the Chase Board of Trade for a grant sufficient to establish an isolation hospital. If the government will give the money required for the construction of the building, the citizens are prepared to furnish and equip the hospital.

At the twentieth annual meeting of the directors of the Kootenay Lake General Hospital, the treasurer stated that last year the hospital made a profit of \$1,302.05. The plans for the new building were submitted. It is to be commenced at once and will contain fifty-three rooms. During 1912, 583 patients were treated,

the aggregate number of days' treatment being 9,971. Sixteen deaths and forty-nine births occurred, and the largest number of patients in the hospital at any one time was thirty-six.

Canadian Literature

ORIGINAL CONTRIBUTIONS

Dominion Medical Monthly, April, 1913:

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|-----------------------------------------------|----------------|
| Treatment of Diffuse Septic Peritonitis . . . | H. A. Bruce. |
| Sterilization and other interests . . . | J. S. Sprague. |

The Canadian Practitioner and Review, March, 1913:

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|-----------------------------------------|-----------------|
| Medical Heresy | A. F. McKenzie. |
| On a case of Cryptogenetic Anæmia . . . | O. C. Gruner. |

Public Health Journal, March, 1913:

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|-------------------------------------------------------------|-----------------|
| Heredity as a cause of Mental Defectiveness | J. P. Downey. |
| The Social Evil | J. Pederson. |
| How to obtain efficiency from Pressure Filters | H. W. Cowan. |
| The effects of immigration on the National Health | W. W. Lee. |
| Sewage Disposal in Rural Districts . . . | A. Rodwell. |
| Human Efficiency | W. A. Evans. |
| The first regular Open Air School in Canada | J. H. Holbrook. |
| Nursing side of Medical Inspection of Schools | L. L. Rogers. |
| Unemployment and the Public Health . . | B. S. Rowntree. |
| The use of Typhoid Vaccine | G. A. Gray. |
| The future of the Public Health Laboratory | H. W. Hill. |

L'Union Médicale du Canada, March, 1913:

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|------------------------------------------|----------------|
| L'Iode, antiseptique chirurgical | O. F. Mercier. |
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Le Bulletin Médical de Québec, March, 1913:

Calculose de l'urèthre—Fracture du Pied	A. Simard.
La Question de l'Inspection Médicale des Ecoles, à Québec	Dr. L.

The Canadian Practitioner and Review, April, 1913:

Some Aspects of Renal Surgery . . .	Ramon Guiteras
Some clinical observations on Atherosclerosis	James Third.
Acromegaly with Localized Muscular Atrophy	Julian Loudon.
Medical Thoughts, Truths, Facts, and Fancies	J. S. Sprague.

Medical Societies

BRANT COUNTY MEDICAL ASSOCIATION

A SUCCESSFUL meeting of the Brant County Medical Association took place at the Brantford Club, March 13th. Dr. Olmstead, of Hamilton, addressed the meeting and his paper was followed by an interesting discussion, in which Dr. E. R. Secord and Dr. C. C. Fissette took part.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE ninth regular meeting of the Society was held Friday evening, February 7th, 1913, Dr. D. J. Evans, president, in the chair.

CASE REPORT: Brain tumour. Puncture of corpus callosum. By Dr. E. W. Archibald.

DISCUSSION. Dr. J. M. Elder: I do not quite gather from Dr. Archibald's remarks what the exact relation is between the hydrocephalus and the tumour. I understood him to say he still thinks there is a tumour, and I would like to know what is the relation of the tumour to the hydrocephalus; are all the symptoms due to the latter or to the former, or does the irritation of the tumour produce the hydrocephalus? With regard to the interesting re-

marks about drainage in these cases, it does seem that drainage is not very much to be relied upon. If you can get the fluid out on the surface, then it may be absorbed by the Paccionian bodies, or by the veins. I saw, in Chicago, several cases where permanent drainage was attempted by putting in small glass tubes, and the claim was made that great benefit was derived from it. Personally, I think the habits complained of by this patient really are the crux of the whole matter, and it is a question whether it is worth while doing much for patients who, speaking generally, have congenitally defective brains; you do not get a sane person because you do not start with one.

Dr. E. W. Archibald: With regard to Dr. Elder's question as to what is the relation of these cases of tumour to hydrocephalus, I feel sure that the patient has a tumour which is not localizable. I discovered very definitely that he also had a complicating hydrocephalus. It is pretty well established now, I think, that any tumour, wherever situated in the brain, may, by pressure, so block the entrance to the fourth ventricle or the aqueduct of Sylvius and the foramen magnum as to cause an obstruction in the posterior fossa and in that way dam back the cerebro-spinal fluid in the ventricles. Doubtless many of the symptoms are due to the internal hydrocephalus rather than to the tumour itself. After all, it is the general space reduction which counts. I lately did a ventricular puncture in a case of epidemic cerebro-spinal meningitis and found a pressure of 700 mm. of water in the ventricles. The patient was markedly spastic in the legs and arms before operation and was quite flaccid afterwards; an observation which goes to show that spasticity may be due entirely to pressure from the internal hydrocephalus. So, in cases of tumour, many of the symptoms of cerebral compression or paralysis "à distance" and various vague signs are pretty certainly due to the complicating internal hydrocephalus. Drainage through the corpus callosum is not absolutely to be relied upon, but its results are frequently remarkable. Of course it is very much worth while in these cases of tumour to do it; while, on the other hand, I do not think it offers much in congenital hydrocephalus.

DEMONSTRATION: The value of radiography in mastoid disease. With exhibit. By Dr. H. S. Birkett.

Perhaps, in order to understand more of the development of the means we have at the present day of recognizing the value of radiography, as applied to disease of the mastoid, I might briefly mention some of the earlier methods of diagnosis and contrast

them with that of radiography. In the early days of otology, it was only recognized that the mastoid process was infected by disease when it was so far advanced as to produce such a definite fluctuating swelling that the auricle was projected forwards; and only then was it deemed necessary to interfere. Thirty years ago an attempt was made to recognize the early involvement of the mastoid with disease by means of the surface temperature, and for that purpose a thermometer was constructed, and I remember very well that this was the routine method of recognizing disease of the mastoid. If the temperature was found to be a little more than normal, it was supposed that there had been early involvement of the mastoid. The next attempt was by means of transillumination. This method was first carried out in Vienna some years ago and it has since been improved upon by Mosher, of Boston. The speculum of this apparatus is inserted into the auditory canal and in a very dark room, if no disease be present, you can see that the mastoid is fairly well illuminated; but if disease be present the illumination is indistinct.

When reflecting on the value of radiography in disease of the frontal sinuses and antra, it occurred to me that perhaps the same method might be applied to the mastoid process, and thus, independently of any work that had been done elsewhere, I had the first plate made in 1908. It was taken with the patient lying on his face, but the result was not satisfactory, as only the cells of the tip of the mastoid were visible. Studying the matter still further, I learned that Scheier, of Breslau, had done some work along these lines, but his plates were taken with the patient lying on his side. In 1909 I again took up the work and brought it to the stage of perfection in which it stands to-day. In the autumn of that year I met Beck, of Chicago, when he gave a demonstration in New York, and found that the method which we had adopted was on somewhat similar lines, and I was encouraged thus to carry on this work from the results he had obtained; most of his work was on skulls, whereas our work has been altogether on the human subject. In 1910 the work had so far progressed that on attending the meeting of the British Medical Association in London, I exhibited a number of slides, which proved of such interest to the members that it is now a routine method in their examination. Mr. Sidney Scott, of London, has advanced the method by adding stereoscopy to the radiography of the mastoid. The Royal Society of Medicine quite recently gave an evening to a discussion of this subject. In 1911, Kanasugi, of Tokio, did similar work.

What are the practical results obtained from radiography? First we learn from the plate the character of the mastoid bone itself; it may be either pneumatic, diploetic, or sclerosed. We can definitely determine from the radiogram the exact situation and relation of the lateral sinus to the mastoid. In some cases we can actually locate a thrombus in the lateral sinus. We are able to recognize by this method the early involvement of the mastoid when apparently there are no symptoms to indicate it by the condition of the middle ear itself. I recollect two or three cases which came under my care, where the examination of the middle ear was negative and even very little tenderness was elicited over the so-called "chief points" of the mastoid, the patient complaining only of a neuralgic condition of the head. One of these cases had been treated for four weeks for so-called neuralgia. The radiogram showed that the mastoid was definitely involved in a suppurative condition, which was confirmed at operation.

Then followed a demonstration of a large series of radiograms exemplifying normal and diseased conditions of the mastoid. In connexion with this work of radiography Dr. Birkett expressed his appreciation of the invaluable assistance of Mr. MacNeil of the Royal Victoria Hospital.

DISCUSSION. Dr. W. W. Chipman: I would like to ask Dr. Birkett how he distinguishes the condition of one mastoid from that of the other or opposite mastoid in these pictures. I understand that the picture is taken laterally through and through the head and I would like to know how the one picture does not confuse or cover up that of the other side.

Dr. Birkett: The head is at an angle of 25 degrees and so placed that the mastoid which is not to be taken is thrown absolutely out of focus.

Dr. Robert Wilson: The question which Dr. Chipman just asked was one which occurred to me, because the method which Dr. Birkett has adopted is only one of the methods which throw out the opposite mastoid, and as demonstrated to-night it accomplishes its object very well indeed. It is the method most used by Carl Beck, I believe. Sydney Lang takes an angle of 20 degrees to one side and 15 degrees above the external meatus, and while it does not give you such a pretty picture as that shown to-night, it does, perhaps, give one a very true idea of the actual condition of affairs. The whole question of radiography of the sinuses is much more difficult than at first appears; the sphenoids are particularly difficult to show. Speaking of them, perhaps the method

adopted in Germany may be mentioned as a very good one; that is, taking the picture from above the head and showing it through the angle of the jaw. Skinner takes an angle from the back of the head and shows the sphenoids through the orbit of the opposite side. The ethmoids are very easy to take, but difficult to distinguish from one another. In my seventeen years' experience of this kind of work, I have never seen more beautiful plates than those presented to-night. Mr. MacNeil is to be congratulated on his technical results.

Dr. J. G. Adami: I join with all here present in congratulating Dr. Birkett, and those who have worked with him, upon the splendid demonstration he has afforded to us. It is, I think, but meet, that when Dr. Birkett tells us of the excellent results that have followed the employment of the stereoscopic method of studying radiographs of the mastoid area, we should recall the pioneer part played by one of our members in the application of that method, —a member whom we all honour. If I mistake not, it was in this very room that Dr. Girdwood gave the first public demonstration of the method of taking a stereoscopic radiograph, and of the value of stereoscopy in determining the exact location of the lesions shown in radiograms.

PAPER: The paper of the evening was read by Dr. J. Appleton Nutter on "Congenital anomalies of the fifth lumbar vertebra."

CASE REPORT: Placental tumour, by Dr. D. J. Evans.

G. G., aged twenty-nine, 11-para, English, admitted to the Maternity Hospital May 24th, on account of severe vomiting. The general health had always been fair; married one and a half years, had had one child, during the pregnancy moderately severe vomiting, labour difficult. This child died at the age of five months. The last menstruation commenced March 15th, 1912. Vomiting began three weeks before entering hospital and had gradually increased in severity. On examination she was found to be in a fairly well nourished condition, of blond complexion. Pelvic measurements practically normal. An intrapelvic examination showed the uterus to be enlarged. Under treatment by sedatives and rest in bed she improved and left the hospital on June 8th. She was readmitted on June 21st, stating that she had been well until the nineteenth, when vomiting returned with severe abdominal pain. Pain recurred at times during her stay in the hospital. She left much improved, eating the regular diet without inconvenience. On October 26th, she was again admitted to the hospital, being then seven months pregnant. Two days previously she had wakened

in the night nauseated and had begun to vomit, this continued and, on admission, there was almost constant retching and vomiting. The vomitus was deeply bile-stained, containing much mucus. On examination the abdomen was very large and prominent, the fundus three fingers' breadth below the ensiform cartilage. A diagnosis of hydramnios was made. The patient complained of constant epigastric pain and only rested in the sitting posture. Temperature normal, pulse 90-112. Treatment was gastric lavage and rectal administration of nutrient enemata and salines. November 1st, she went into labour at 7.30 a.m., the vertex presented, membranes ruptured artificially and 3,400 c.c. of fluid escaped, after which the child's head appeared. The child was a female weighing 1,800 grammes, very vigorous, and when discharged from hospital weighed 1,470; it has since improved and is now a well nourished infant. The placenta separated and was easily expressed twenty minutes after the child was born. The blood loss was about 200 c.c. The patient left the hospital two weeks after delivery.

On a cursory examination, the placenta and membranes appeared quite normal, but on palpation a hard mass was felt in the placenta as large as a hen's egg, which was easily shelled out. On section it had a dark-red colour and was spleen-like. The placenta was sent to the Royal Victoria Hospital for examination. Tumours of the placenta are of infrequent occurrence, seventy-nine cases only being reported in the literature. The most frequent variety is the myxoma fibrosum. Most placental tumours consist of masses of villi with hypertrophy.

Dr. Grüner's report of the specimen may be summarized as follows: Two masses are found in the placenta close to the insertion of the cord, the main tumour was slightly lobulated and of flesh colour; the second mass was a simple hæmorrhagic infarct. Microscopic examination of the tumour showed it to consist of very closely packed capillaries of small size, separated by a small amount of connective tissue with relatively large nuclei. There was no tendency to fibrous formation.

Dr. W. W. Chipman: I would like to congratulate the president of this Society on the specimen that he has shown this evening. This tumour of the placenta makes, I think, the seventy-third placental tumour of which we have record. The tumour itself is of the ordinary type, a chorio-angioma, with areas of myxomatous tissue, more or less non-vascular. The main mass of the tumour, however, is made up of blood spaces. Johnston, of Edinburgh, read a paper before the meeting of the British Medical Association,

in Liverpool, last year, on "Tumours of the Placenta," and showed a single specimen very similar to this one of Dr. Evans. The tumours themselves seem to have very little pathological significance. They seem to interfere in no way with the nourishment of the embryo and foetus, and the most that can be said is that they are frequently associated with a certain degree of hydramnios.

THE tenth regular meeting of the Society was held Friday evening, February 21st, 1913, Dr. D. F. Gurd in the chair.

LIVING CASES: 1. Abscess of the liver, by Drs. George Shanks and J. Alexander Hutchison.

Dr. Shanks: I am indebted to Dr. Finley and Dr. Peters for permission to bring this case before you. The patient was admitted from the out-patient clinic of Dr. Peters to the medical wards under Dr. Finley. He gave the following history: age thirty-eight, a brewer by trade, born in Germany. In 1908 went to Cairo, and in 1909, had an attack of dysentery lasting three weeks, fifteen or twenty stools a day containing blood and mucus. With this attack he also had pain in the right side and was told there was some enlargement of the liver. For a year and nine months he was well, then he had another severe attack of pain in the right side in the neighbourhood of the liver, which he was told was appendicitis; it lasted for some ten days; no operation. This was in March, 1912. In September, 1912, he went to Greece and there took sulphur baths for some time. In December, 1912, he again had severe pain in the right side—lower thorax—and was told that he had enlargement of the liver and advised to go to a cold country. On December 23rd, he appeared in the out-patient department of the General Hospital. He complained of pain in the right side—lower thorax—with marked constipation. His appetite was fair, no vomiting, no cough; he had lost a great deal of weight and had frequent severe sweats. The signs present were those of an enlarged liver; dulness from the fourth rib in front in the nipple line to $4\frac{1}{2}$ cm. below costal border = 21 cm. Posteriorly on the right side, dulness from the angle of the scapula to the last rib. On admission to the ward his temperature ran a remittent febrile course with occasional chills and rises to 103° . Urine showed neither albumin nor sugar and no pus. Blood examination showed red cells 3,340,000, white cells 10,400, hæmoglobin 66 per cent.; differential count of white cells: 70 per cent. polymorphonuclears, 16 per cent. lymphocytes, 12 per cent large mononuclear cells and 2 per cent. mast cells. On the 8th of January, 1913,

a needle was inserted in the right side through the seventh intercostal space in the posterior axillary line and 80 cc. of reddish-brown fluid withdrawn. Examination of this revealed no amœbæ. On January 10th, he was transferred to the surgical side for operation. Such cases are interesting, only six having been admitted to the General Hospital in the last twelve years. The last, in 1909, was reported by Dr. Finley and the interesting fact in this case was that the man had never been outside of this province, save to Ottawa.

Dr. J. Alexander Hutchison: The operation turned out to be quite insignificant and was done by Dr. Barlow. When the case was transferred from the medical side the presence of this fluid had already been established and the question resolved itself into the best way of draining the cavity. The difficulty, of course, was to know just where the abscess would be. In this instance the fluid had been drawn off from the dome of the liver, so that seemed to be the proper place to effect drainage. One of the ribs was removed and it was at once noticed that the remaining portion of the periosteum bulged quite definitely and fluctuated, so that it was a small matter to enlarge here; we got into a fairly large cavity which seemed to run downwards and outwards, in fact a sort of canal on the surface of the liver. We followed this and put in a large drainage tube, and the patient has done very well. There has been a marked improvement. The fluid was negative and of the regular anchovy sauce character.

2. Osteitis deformans (Paget's disease) by Dr. A. Mackenzie Forbes. The last time such a patient was presented to this society was about two years ago, when Dr. Martin presented a case. The present patient came to the out-patient department of the General Hospital on the February 3rd last, complaining that his legs were stiff. He was in perfect health until two years ago, when he first noticed this stiffness over his legs and body; this increased at times and he had pain in his lower extremities. He was a constable in England and served during the South African War. While in South Africa he had dysentery, but apparently had never suffered from any other illness since childhood. During the past two years he has lost one and a half inches in height. Osteitis deformans, or Paget's disease, as it is called, was first described in 1877 by Sir James Paget, and it is supposed to be a chronic inflammatory infection of the bones, characterized by hypertrophy and softening. The bones enlarge, soften, and become intensely curved and misshapen, especially those bearing weight.

It is questionable, I think, whether this curving or misshape is due absolutely to weight-bearing, possibly more than this enters into the reason. As a rule, the lesions are symmetrical and general in distribution. The important point is that the bones of the lower extremities and the skull and the spine are most involved; many patients first complain that their head is becoming swollen.

Two things have been noticed. First of all, in severe cases they have eventually died of sarcoma. Whether this is coincident with or related to the disease, nobody seems to know. Secondly, some people say that syphilis may cause osteitis deformans. This has not been proved. In our case there is no history of the disease and the Wassermann test was negative. Arterial sclerosis has been noticed in patients suffering from this affection. In Dr. Martin's case the sclerosis of the arteries present may have been due to the advanced age of the patient. The patient which I present to-night is only thirty-four years of age, and yet he shows marked sclerosis, so marked that the arteries are very apparent in the x-ray plates which I show to-night. The most concise description of the lesions is that by Sir James Paget: "The disease is one beginning in advanced life usually affecting many bones, most frequently the long bones of the lower extremities, the clavicle, and the bones of the skull. The bones enlarge and soften, and those carrying waste or bearing muscular traction commonly become curved and misshapen. The disease is slowly progressive and is attended with pains in the affected bones varying in severity and usually described as rheumatic or neuralgic in character. The general appearance, movement, and posture of the patients are so alike that these may often suffice for diagnosis. The most characteristic features are the loss of height, indicated by the low position of the hands, the stooping or round shoulders, the head held vertically, the chin raised and the chest sunken towards the pelvis, the abdomen pendulous, the curved lower limbs held apart and usually with one in advance of the other; the enlarged cranium, square-like and with bosses, may add distinctiveness to these characteristics and they are completed in the slow and awkward gait of the patient." The head in this patient is not particularly enlarged, but the characteristic bosses are easily palpable.

DISCUSSION: Dr. O. C. Gruner: The case we had in the Royal Victoria Hospital was undoubtedly in a later stage than the case of the present patient, showing as it did carcinomatous change in the bone. There was rarefaction of the bone produced by a conversion of the bone marrow tissue into a rather gelatinous

fibrous tissue; this increased in density and cellular looseness until the marrow was rich in fibrous cells. In our case the first swelling appeared on the radius and was made up of an excessive overgrowth of these cells, here and there producing a spindle-celled sarcoma. Later on, a swelling appeared in the upper end of the humerus and that was associated with ossification of the new growth. The sarcomatous tissue became very rich in bone trabeculae of the characteristic form, very slender and forming a close network. Subsequently, a growth appeared in the head of the clavicle associated with the same tendency to ossification. Finally, tumours appeared in the skull, and these had the structure of pure spindle-celled sarcomas. It appeared as if this change were the result of some super-added process and it was not at all certain that the sarcoma was the inevitable result of the disease.

PAPER: The paper of the evening was read by Dr. F. W. Harvey on "Gymnastic treatment for lateral curvature of the spine." Dr. Harvey illustrated his paper by diagrams and apparatus.

DISCUSSION: Dr. Fraser B. Gurd: I would like to ask Dr. Harvey whether this condition is not seen very much more often in girls than in boys?

Dr. A. Mackenzie Forbes: I was particularly glad and particularly interested to hear Dr. Harvey speak to-night on the subject of scoliosis. I do not know any subject which interests me more than does this. I have already spoken on the subject before this society this year and some of you may perhaps remember that I suggested a different form of treatment than that mentioned by Dr. Harvey. Dr. Harvey is associated with me at the General Hospital in the treatment of scoliosis and I find that the part he does in the development of the muscles, etc., is just as important as the part which I do: that is, the attempt to model the bones into their proper shape. In the treatment of scoliosis we have to consider various things. In the advanced or osseous form it is a question of trying to remodel deformed bones, and no exercise under the sun is going to remould them. This can only be done by the law of Wolff. It is most important to remember that scoliosis is not a deformity of the spine alone. It is a deformity of the whole trunk and especially of the thorax; the ribs are even more deformed than is the spine, and in our exercises and in our mouldings we must recognize that we are dealing with a deformed trunk, especially a deformed thorax. I would like to accentuate the statement that I have already made that, in spite of the fact that the deformity of

scoliosis is one of bone more than of muscle, exercises are most important. Even in advanced cases, exercises have their place. Such exercises must be instituted to loosen up and make lax the ligaments in order that we can improve the positions of the deformed bones. Again it is necessary to strengthen the muscles to maintain the improved position in which we have placed the bones, in order to correct the deformity by means of the law of Wolff.

Dr. W. G. Turner: The society should certainly congratulate Dr. Harvey on the very patient work that he has done. As he says himself, the length of time devoted to these cases is certainly striking. First of all we should congratulate Dr. Harvey on the excellent schemes which he has for estimating the rotation of the spine. I think that simple scheme of the vertebral column to demonstrate rotation is most ingenious; the method of measuring the rotation also is very creditable. I would remind the society of Dr. Tait MacKenzie's instrument, and this is much more practicable and applicable than most of the continental ones. In the first place, with regard to the rotation, those interested in anatomy might bear in mind that this fixed point of rotation usually occurs through the articular processes and, until this past year, the correction of these failed in the vast majority of cases because when we hyperextended the spine we really locked it.

Dr. F. W. Harvey: In answer to Dr. Gurd I would say that the statistics give the condition as much more frequent in girls than in boys and that is explained by the fact that girls do not take such active exercise as do boys; they sit more and are more apt to acquire malpositions.

PATHOLOGICAL SPECIMENS: Dr. O. C. Gruner.

1. Pneumonia. Grey hepatization. It is unusual to find so typical a condition at autopsy. The usual forms that have been met with during the last three years have been mixed types and never exactly as described in the text-books. The specimen is from a male, aged forty, who had been ill for eleven days; the illness started after a severe cold contracted by the patient while intoxicated. The whole of the lung is converted into a solid mass looking like liver. The outer surface is covered with a fibrinous exudate which glues together all the lobes. Along with this condition there was also a change in the heart, a recent endocarditis superadded on an old lesion, while there was also a very marked mitral stenosis of the button-hole variety. The endocarditis was interesting in connexion with the causation of the disease. Whether the pneumonia had started first or not, or whether the two organ-

isms were varieties of one kind, it is difficult to say. There have been a number of similar cases of endocarditis during this winter, each associated with large vegetations.

2. The second specimen is a lung from a young man who had been ill for a long time with chronic valvular disease with recurrent attacks. This attack had been going on for some weeks and it is remarkable to see the size of the vegetations in the aortic valve. One hangs down into the ventricle and the blood adhering to it passes far down, nearly to the apex of the heart. The other cusps are involved, they had already been destroyed by ulcerative processes; and the inflammation has spread through into the muscle of the heart. This case also showed an organism of the pneumo-streptococcic variety and is of interest in that connexion. We have had three cases of this kind.

3. The next case is one of a curious form of cirrhosis of the liver, in an Italian, aged fifty, living in Canada for six years. There was no history of any previous illness, excepting a vague history of fever when he was twenty-five years of age. It was interesting to ascertain whether this was a case of Banti's disease or not. The surface of the liver is very nodular and shows increase of tissue between the lobules. The microscopic picture does not show anything like the naked eye lesion. The spleen of this case shows its surface opaque from hyaloseritis with an area of calcification in the centre. The cut surface shows increase in the trabecular tissue, and the microscope demonstrates the fibrosis throughout the organ.

4. This last specimen is from a private case of Dr. Chipman's: A young woman developed severe vomiting very early in pregnancy. The statement is that there was no albuminuria. Forced labour was induced at about the eighth month. The uterus is shown here as it appeared four days after delivery. The main features are the presence of a large thrombus in the ovarian vein on the right side; no septic change in the thrombus or in the interior of the uterus. The wall of the uterus is very firm.

The main interest in the case was in the condition of the liver. This was very much diseased and much diminished in size—it weighed about 600 grammes. The cut surface showed a very peculiar structure, the round lobular arrangement being replaced by a linear one. The original appearance has been altered because the bile has stained the whole liver tissue, while some change has occurred after the organ had been left standing. The peculiar markings around the vessels indicate decomposition at a rapid rate,

within twenty-four hours after the removal of the specimen. Originally it was quite brown and the lobules were outlined by very brilliant red lines of injection. Microscopically, the change is one of dissociation of the periphery of the lobules with increased fat. Under the microscope the outer layer of the lobules is gone and what is left stains a bright yellow with Scharlach. The central part is less damaged but is infiltrated with bile. At the very edge of each lobule are numerous growing acini.

The appearance seemed to be specially interesting in contrast to a number of eclamptic cases which we have had lately. In a purely eclamptic case the liver lobule is entirely lost. It is converted into a number of spaces of equal size. There is another form of change met with in some eclampsias, where the entire loss of lobular arrangement is due to the breaking down of the liver cells. The three different forms of liver disease related to pregnancy are rather interesting. The change in the present case is a sort of subacute yellow atrophy; the poison seems to have been carried through the portal vessels and to have destroyed the cells commencing at the periphery, a fatty change first taking place. The peripheral cells take up everything they can get, and die, and then the next layers take up the poison. Another point is that the fat in these liver cells is not an ordinary fat, but one derived from the protein of the cells; this accounts for the peculiar brownish-yellow colour of the tissue when it is fresh.

DEMONSTRATION: Complications attending the extraction of senile cataract, with micro-photographs, by Dr. F. T. Tooke.

DISCUSSION: Dr. J. W. Stirling: We have to thank Dr. Tooke for this demonstration, it is really most instructive. I did not know that one of the specimens was to be from one of my own cases, but it is characteristic of one of the most unfortunate accidents we can encounter in cataract extraction, this expulsive hæmorrhage. It cannot be foretold, and of course results in the loss of the eye. Among the other sections, there was one of a healing wound of the cornea which was beautifully demonstrated. When the incision is made, the anterior elastic lamina retracts and the gap between the severed fibres is filled by polymorphonuclear leucocytes and epithelium, which fills in the superficial end of the opening. Later, fibrous tissue is developed from the corneal cells. On the posterior surface you can see the retracted ends of the posterior elastic lamina. The epithelium grows across this and the posterior elastic or descemet membrane is slowly replaced, whereas the anterior elastic membrane never is. In another specimen,

prolapse of the capsule into the corneal wound is seen, preventing its healing; this not infrequently gives rise to an increased intra-ocular tension by blocking off the angle of the anterior chamber. I regret that the lateness of the hour prevented Dr. Tooke from giving further details of his specimens.

CASE REPORT: Treatment of shortening due to recent fracture, by Dr. B. C. Patterson.

LONDON MEDICAL SOCIETY

THE officers of the London Medical Society for the present year are: president, Dr. Reason; vice-president, Dr. Tillman; secretary-treasurer, Dr. Seale Holmes. At the March meeting of the society, Dr. Meek read a paper on uterine cancer, emphasizing the importance of early recognition.

ST. JOHN MEDICAL SOCIETY

AT the regular March meeting of the St. John, N.B., Medical Society, Dr. F. J. Hogan gave a very interesting paper on gonorrhoea in the male. At this meeting the society received two valuable gifts: a fully equipped reflectoscope was presented by Mrs. M. A. Sheffield, and Dr. F. N. G. Starr, of Toronto, presented a bound copy of the address given by the late Dr. Bayard at Kingston in 1895, when he was president of the Canadian Medical Association.

HURON COUNTY MEDICAL ASSOCIATION

THE regular quarterly meeting of the Huron County Medical Association was held at Seaforth, March 26th, under the presidency of Dr. Gunn. About twenty members attended the meeting. An address of more than usual interest was delivered by Dr. H. A. McCallum, of London, Ont., and papers were read by Dr. Gunn, of Clinton, Dr. Burrows, of Seaforth, and Dr. Michell, of Dublin. The next meeting of the association will be held at Wingham.

CANADIAN MEDICAL ASSOCIATION

The following are some of the papers which will be read at the annual meeting next June.

Section of Public Health:

Dr. J. W. S. McCullough, Toronto: "Public Health Legislation in Ontario." Discussion by Dr. M. M. Seymour, Regina, Dr. D. G. Revell, Edmonton, and Dr. C. J. Fagan, Regina.

Dr. C. J. Hastings, Toronto: "Modern Public Health Work."

Dr. G. C. Nasmith, Toronto: "Control of Municipal Milk Supply."

Dr. John Stewart, Halifax, will present the report of the special committee of the Canadian Medical Association on the medical inspection of schools.

Dr. R. E. Wodehouse, Fort William: "The great need of the physician's active co-operation in Public Health Work."

Symposium—"Venereal Disease as a practical Public Health Problem." Papers by Dr. Hill, London, and Dr. Clarkson, Toronto. Discussion by Professor Watson, Toronto, and others.

Section of Laboratory Workers:

Dr. O. C. Gruner: "The Spleen in the light of Recent Histology."

Dr. A. H. MacCordick: "On the Percentage of Fat, Protein, Total Solids, and Carbohydrates in the Heart, Liver, and Kidney in Normal and Diseased Conditions."

Dr. F. R. Miller: "Methods employed in stimulating the Cerebral Cortex."

Dr. E. J. Mullally, Montreal: Paper.

Dr. F. B. Gurd: "The Toxins of Intestinal Obstruction."

Dr. E. W. Archibald: "Ascending Infection of the Common Bile Duct."

Dr. G. Shank: "A study of a case of Splenomegaly."

Dr. C. K. Russel and Dr. J. Kaufman: "Examination of Cerebro-spinal Fluid in Tabes and the Results of Treatment."

Dr. F. B. Bowman, Hamilton: Paper.

Dr. A. H. Caulfeild, Toronto: "The Co-relation of Biological Findings and Clinical Progress in Tuberculosis."

Dr. R. G. Armour, Toronto: "Syphilis as encountered by the Neurologist."

Dr. C. G. Imrie, Toronto: "Some facts with regard to Fatty Degeneration of the Heart."

Dr. Fletcher McPhedran, Toronto: Paper.

Dr. F. B. Harris: Paper.

Medical Societies

- CANADIAN MEDICAL ASSOCIATION** :—President—H. Goodair Mackid, Calgary. President-elect—H. A. McCallum, London, Ont. Sec'y-Treas.—Dr. W. W. Francis, 836 University Street, Montreal.
Annual Meeting, London, Ont., June 24th to 27th, 1913.
- ACADEMY OF MEDICINE, TORONTO** :—President—Dr. R. A. Reeve. Secretary—Dr. Harley Smith.
- ASSOCIATION OF MEDICAL OFFICERS OF THE MILITIA** :—President—Lt.-Colonel A. T. Shillington, A.M.C., Ottawa. Secretary—Captain T. H. Leggett, A.M.C., Ottawa.
- BRITISH COLUMBIA MEDICAL ASSOCIATION** :—President—Dr. A. S. Munro, Vancouver. Secretary—Dr. J. W. McIntosh, Vancouver.
- CALGARY MEDICAL SOCIETY** :—President—Dr. E. J. Madden. Secretary—Dr. J. P. Palmer. Treasurer—Dr. G. Johnson.
- CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS** :—President—Dr. J. G. Adams, Montreal. Secretary—Dr. George D. Porter, Ottawa.
- CANADIAN HOSPITAL ASSOCIATION** :—President—Dr. H. A. Boyce, Belleville. Secretary—Dr. J. N. E. Brown, Toronto.
- CANADIAN PUBLIC HEALTH ASSOCIATION** :—President—Dr. C. A. Hodgetts—General Secretary—Major Lorne Drum.
- CENTRAL SOUTHERN ALBERTA MEDICAL SOCIETY** :—President, Dr. J. S. Murray, Okotoks. Secretary-Treasurer—Dr. G. E. Learmonth, High River.
- COLCHESTER-HANTS MEDICAL SOCIETY** :—President—Dr. J. W. T. Patton, Truro. Secretary—Dr. H. V. Kent, Truro.
- EDMONTON MEDICAL SOCIETY** :—President—Dr. D. G. Revell. Secretary—Dr. A. R. Munro.
- HALIFAX MEDICAL ASSOCIATION** :—President, Dr. Kirkpatrick. Secretary—Dr. MacIntosh.
- KINGSTON MEDICAL AND SURGICAL SOCIETY** :—President—Dr. W. G. Anglin. Secretary—Dr. W. T. Connell. Treasurer—Dr. G. W. Mylks.
- LONDON MEDICAL ASSOCIATION** :—President—Dr. C. H. Reason, 538 Dundas St. Secretary-Treasurer—Dr. L. S. Holmes, 260 Hamilton Rd.
- LUNENBURG-QUEEN'S MEDICAL SOCIETY** :—President—Dr. J. W. Smith, Liverpool. Secretary—Dr. L. T. W. Penney, Lunenburg.
- MANITOBA MEDICAL ASSOCIATION** :—President—Dr. J. S. Matheson. Secretary—Dr. J. Halpenny.
- MONTREAL MEDICO-CHIRURGICAL SOCIETY** :—President—Dr. J. M. Elder. Secretary—Dr. Hanford McKee.
- NOVA SCOTIA MEDICAL SOCIETY** :—President—Dr. G. E. DeWitt. Secretary—Dr. J. R. Corston.
- ONTARIO MEDICAL ASSOCIATION** :—President—Dr. H. A. Bruce. Secretary—Dr. F. A. Clarkson, 471 College Street, Toronto.
- OTTAWA MEDICO-CHIRURGICAL SOCIETY** :—President—Dr. J. D. Courtenay. Secretary—Dr. F. W. C. Mohr.
- OTTAWA MEDICAL SOCIETY** :—President—Dr. Charles W. Gorrell. Secretary—Dr. A. MacLaren. Treasurer—Dr. Harold Alford.
- PETERBORO MEDICAL SOCIETY** :—President—Dr. G. Stewart Cameron. Secretary—Dr. E. A. Hammond.
- PICTOU COUNTY MEDICAL ASSOCIATION** :—President—Dr. C. S. Elliot, Stellarton. Secretary—Dr. John Bell, New Glasgow.
- PRINCE EDWARD ISLAND MEDICAL ASSOCIATION** :—President—Dr. A. A. MacDonald. Secretary—Dr. W. J. MacMillan, Charlottetown.
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- SASKATCHEWAN MEDICAL ASSOCIATION** :—President, Dr. D. Low. Secretary—Dr. A. Wilson.
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- ST. THOMAS AND ELGIN COUNTY MEDICAL SOCIETY** :—President—Dr. A. B. Riddell. Secretary—Dr. P. O. King.
- THE VALLEY MEDICAL SOCIETY** :—President—Dr. W. F. Read. Secretary—Dr. O. R. Peters.
- THE NEW BRUNSWICK MEDICAL SOCIETY** :—President—Dr. G. R. J. Crawford. Secretary—Dr. F. H. Wetmore.
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- WINNIPEG CLINICAL SOCIETY** :—President—Dr. J. E. Lehmann. Secretary—Dr. G. W. Fletcher.
- WINNIPEG MEDICO-CHIRURGICAL SOCIETY** :—President—Dr. H. P. Galloway. Secretary—Dr. A. J. Earridge.